		DEPARTMENT	TATE OF UTAH OF NATURAL RES OF OIL, GAS AND				FOR				
APPLI	CATION FOR	PERMIT TO DRILL	-			1. WELL NAME and	NUMBER NBU 921-25G2AS				
2. TYPE OF WORK  DRILL NEW WELL	REENTER P	&A WELL DEEPE	EN WELL			3. FIELD OR WILD	CAT NATURAL BUTTES				
4. TYPE OF WELL  Gas We	ell Coall	ped Methane Well: NO				5. UNIT or COMMUNITIZATION AGREEMENT NAME NATURAL BUTTES					
6. NAME OF OPERATOR KERF	R-MCGEE OIL &	GAS ONSHORE, L.P.				7. OPERATOR PHO	NE 720 929-6007				
8. ADDRESS OF OPERATOR P.O	). Box 173779, I		9. OPERATOR E-MAIL Kathy.SchneebeckDulnoan@anadarko.com								
10. MINERAL LEASE NUMBER (FEDERAL, INDIAN, OR STATE) UO 1189 ST		11. MINERAL OWNE FEDERAL IND	ERSHIP DIAN STATE (	<u> </u>	FEE _	12. SURFACE OWN FEDERAL IN	ERSHIP DIAN STATE	FEE _			
13. NAME OF SURFACE OWNER (if box 12	= 'fee')	3				14. SURFACE OWN	ER PHONE (if box	12 = 'fee')			
15. ADDRESS OF SURFACE OWNER (if box	12 = 'fee')					16. SURFACE OWN	ER E-MAIL (if box	12 = 'fee')			
17. INDIAN ALLOTTEE OR TRIBE NAME (if box 12 = 'INDIAN')		18. INTEND TO COM MULTIPLE FORMATI YES (Submit C			FROM NO	19. SLANT  VERTICAL DIF	RECTIONAL 📵 H	ORIZONTAL 🗍			
20. LOCATION OF WELL		DOTAGES	QTR-QTR		SECTION	TOWNSHIP	RANGE	MERIDIAN			
LOCATION AT SURFACE	1484	FNL 763 FEL	SENE		25	9.0 S	21.0 E	S			
Top of Uppermost Producing Zone	1439 F	NL 2042 FEL	SWNE		25	9.0 S	21.0 E	S			
At Total Depth	1439 F	NL 2042 FEL	SWNE		25	9.0 S	21.0 E	S			
21. COUNTY UINTAH		22. DISTANCE TO N	EAREST LEASE LIN 1439	IE (Fe	et)	23. NUMBER OF AC	RES IN DRILLING 240	UNIT			
		25. DISTANCE TO N (Applied For Drilling		AME	POOL	<b>26. PROPOSED DEPTH</b> MD: 9845 TVD: 9640					
<b>27. ELEVATION - GROUND LEVEL</b> 4915		28. BOND NUMBER	22013542			29. SOURCE OF DRILLING WATER / WATER RIGHTS APPROVAL NUMBER IF APPLICABLE Permit #43-8496					
		A	TTACHMENTS			,					
VERIFY THE FOLLOWING	ARE ATTACH	HED IN ACCORDAN	CE WITH THE U	TAH	OIL AND (	GAS CONSERVATI	ON GENERAL R	JLES			
WELL PLAT OR MAP PREPARED BY	LICENSED SUI	RVEYOR OR ENGINEE	R CON	IPLET	E DRILLING	6 PLAN					
AFFIDAVIT OF STATUS OF SURFACE	OWNER AGR	EEMENT (IF FEE SURF	FACE) FOR	ч 5. І	F OPERATO	R IS OTHER THAN T	HE LEASE OWNER				
DIRECTIONAL SURVEY PLAN (IF DIRECTIONALLY OR HORIZONTALLY TOPOGRAPHICAL MAP											
NAME Danielle Piernot	٦	FITLE Regulatory Analys	st		PHONE 72	20 929-6156					
SIGNATURE	ı	DATE 08/13/2010			<b>EMAIL</b> gn	bregulatory@anadarko	o.com				
API NUMBER ASSIGNED 43047512500000	,	APPROVAL			Bri	ocyill					
	nit Manager										

API Well No: 43047512500000 Received: 8/13/2010

	Proposed Hole, Casing, and Cement											
String	Hole Size	Casing Size	Top (MD)	Bottom (MD)								
Prod	7.875	4.5	0	9845								
Pipe	Grade	Length	Weight									
	Grade I-80 Buttress	9845	11.6									

API Well No: 43047512500000 Received: 8/13/2010

	Proposed Hole, Casing, and Cement											
String	Hole Size	Casing Size	Top (MD)	Bottom (MD)								
Surf	11	8.625	0	2370								
Pipe	Grade	Length	Weight									
	Grade I-80 LT&C	2370	28.0		П							

#### **NBU 921-25G2AS**

Pad: NBU 921-25H Surface: 1,484' FNL 763' FEL (SE/4NE/4) BHL: 1,439' FNL 2,042' FEL (SW/4NE/4) Section 25 T9S R21E

> Uintah County, Utah Mineral Lease: UO 1189 ST

#### ONSHORE ORDER NO. 1

#### DRILLING PROGRAM

#### 1. – 2. <u>Estimated Tops of Important Geologic Markers</u>: <u>Estimated Depths of Anticipated Water, Oil, Gas, or Mineral Formations</u>:

<u>Formation</u>	<u>Depth</u>	Resource
Uinta	0 – Surface	
Green River	1,467'	
Birds Nest	1,758'	Water
Mahogany	2,124'	Water
Wasatch	4,726'	Gas
Mesaverde	7,408'	Gas
MVU2	8,326'	Gas
MVL1	8,880'	Gas
TVD	9,640'	
TD	9,845'	

#### 3. <u>Pressure Control Equipment</u> (Schematic Attached)

Please refer to the attached Drilling Program.

#### 4. **Proposed Casing & Cementing Program:**

Please refer to the attached Drilling Program.

#### 5. <u>Drilling Fluids Program:</u>

Please refer to the attached Drilling Program.

#### **Evaluation Program:**

Please refer to the attached Drilling Program.

#### 7. Abnormal Conditions:

Maximum anticipated bottomhole pressure calculated at 9,640' TVD, approximately equals 6,106 psi (calculated at 0.63 psi/foot).

Maximum anticipated surface pressure equals approximately 3,985 psi (bottomhole pressure minus the pressure of a partially evacuated hole calculated at 0.22 psi/foot).

#### 8. Anticipated Starting Dates:

Drilling is planned to commence immediately upon approval of this application.

#### 9. <u>Variances:</u>

Please refer to the attached Drilling Program.

Onshore Order #2 – Air Drilling Variance

Kerr-McGee Oil & Gas Onshore LP (KMG) respectfully requests a variance to several requirements associated with air drilling outlined in Onshore Order 2

- Blowout Prevention Equipment (BOPE) requirements;
- Mud program requirements; and
- Special drilling operation (surface equipment placement) requirements associated with air drilling.

This Standard Operating Practices addendum provides supporting information as to why KMG current air drilling practices for constructing the surface casing hole should be granted a variance to Onshore Order 2 air drilling requirements.

The reader should note that the air rig is used only to construct a stable surface casing hole through a historically difficult lost circulation zone. A conventional rotary rig follows the air rig, and is used to drill and construct the majority of the wellbore.

More notable, KMG has used the air rig layout and procedures outlined below to drill the surface casing hole in approximately 675 wells without incident of blow out or loss of life.

#### **Background**

In a typical well, KMG utilizes an air rig for drilling the surface casing hole, an interval from the surface to surface casing depths, which varies in depth from 1,700 to 2,800 feet. The air rig drilling operation does not drill through productive or over pressured formations in KMG field, but does penetrate the Uinta and Green River Formations. The purpose of the air drilling operation is to overcome the severe loss circulation zone in the Green River known as the Bird's Nest while creating a stable hole for the surface casing. The surface casing hole is generally drilled to approximately 500 feet below the Bird's Nest.

Before the surface air rig is mobilized, a rathole rig is utilized to set and cement conductor pipe through a competent surface formation. Generally, the conductor is set at 40 feet. In some cases, conductor may be set deeper in areas that the surface formation is not found competent. This rig also drills the rat and mouse holes in preparation for the surface casing and production string drilling operations.

The air rig is then mobilized to drill the surface casing hole by drilling a 12-1/4 inch hole to just above the Bird's Nest interval with an air hammer. The hammer is then tripped and replaced with a 12-1/4 inch tri-cone bit. The tri-cone bit is used to drill to the surface casing point, approximately 500 feet below the loss circulation zone (Bird's Nest). The 9-5/8 inch surface casing is then run and cemented in place, thereby isolating the lost circulation zone.

KMG fully appreciates Onshore Order 2 well control and safety requirements associated with a typical air drilling operations. However, the requirements of Onshore Order 2 are excessive with respect to the air rig layout and drilling operation procedures that are currently in practice to drill and control the surface casing hole in KMG Fields.

#### Variance for BOPE Requirements

The air rig operation utilizes a properly lubricated and maintained air bowl diverter system which diverts the drilling returns to a six-inch blooie line. The air bowl is the only piece of BOPE equipment which is installed during drilling operations and is sufficient to contain the air returns associated with this drilling operation. As was discussed earlier, the drilling of the surface hole does not encounter any over pressured or productive zones, and as a result standard BOPE equipment should not be required. In addition, standard drilling practices do not support the use of BOPE on 40 feet of conductor pipe.

#### Variance for Mud Material Requirements

Onshore Order 2 also states that sufficient quantities of mud materials shall be maintained or readily accessible for the purpose of assuring adequate well control. Once again, the surface hole drilling operations does not encounter over pressured or productive intervals, and as a result there is not a need to control pressure in the surface hole with a mud system. Instead of mud, the air rigs utilize water from the reserve pit for well control, if necessary. A skid pump which is located near the reserve pit (see attachment) will supply the water to the well bore.

#### Variance for Special Drilling Operation (surface equipment placement) Requirements

Onshore Order 2 requires specific safety distances or setbacks for the placement of associated standard air drilling equipment, wellbore, and reserve pits. The air rigs used to drill the surface holes are not typical of an air rig used to drill a producing hole in other parts of the US. These are smaller in nature and designed to fit a KMG location. The typical air rig layout for drilling surface hole in the field is attached.

Typically the blooie line discharge point is required to be 100 feet from the well bore. In the case of a KMG well, the reserve pit is only 45 feet from the rig and is used for the drill cuttings. The blooie line, which transports the drill cuttings from the well to the reserve pit, subsequently discharges only 45 feet from the well bore.

Typically the air rig compressors are required to be located in the opposite direction from the blooie line and a minimum of 100 feet from the well bore. At the KMG locations, the air rig compressors are approximately 40 feet from the well bore and approximately 60 feet from the blooie line discharge due to the unique air rig design. The air compressors (see attachment) are located on the rig (1250 cfm) and on a standby trailer (1170 cfm). A booster sits between the two compressors and boosts the output from 350 psi to 2000 psi. The design does put the booster and standby compressor opposite from the blooie line.

Lastly, Onshore Order 2 addresses the need for an automatic igniter or continuous pilot light on the blooie line. The air rig does not utilize an igniter as the surface hole drilling operation does not encounter productive formations.

#### **Conclusion**

The air rig operating procedures and the attached air rig layout have effectively maintained well control while drilling the surface holes in KMG Fields. KMG respectfully requests a variance from Onshore Order 2 with respect to air drilling well control requirements as discussed above.

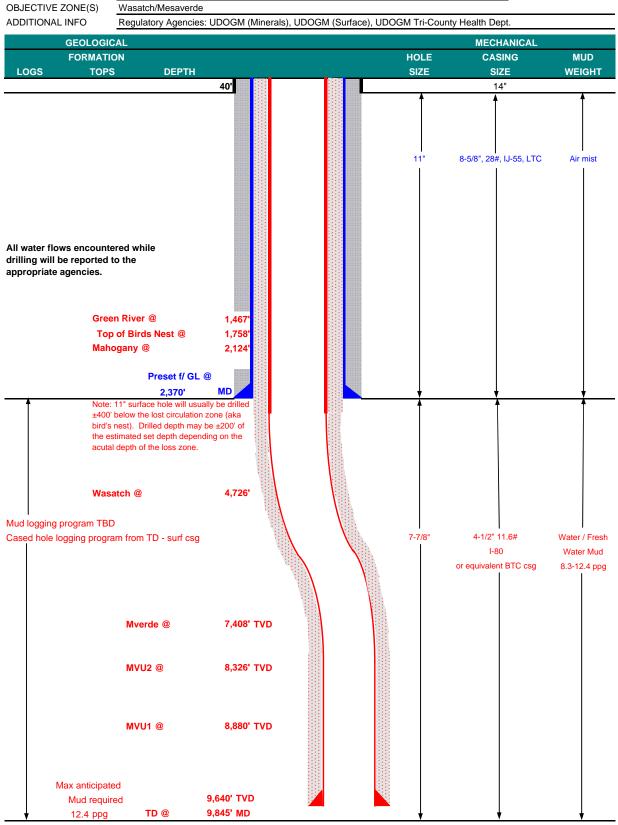
#### 10. Other Information:

Please refer to the attached Drilling Program.



#### KERR-McGEE OIL & GAS ONSHORE LP DRILLING PROGRAM

COMPANY NAME KERR-McGEE OIL & GAS ONSHORE LP DATE August 12, 2010 **NBU 921-25G2AS** WELL NAME 9,640' 9,845' MD TVD Natural Buttes COUNTY Uintah FINISHED ELEVATION 4,914' FIELD STATE Utah SURFACE LOCATION SE/4 NE/4 1,484' FNL 763' FEL Sec 25 T 9S R 21E Latitude: 40.010203 Longitude: -109.492702 NAD 27 BTM HOLE LOCATION SW/4 NE/4 1,439' FNL 2,042' FEL Sec 25 T 9S R 21E Latitude: 40.010343 -109.497268 NAD 27 Longitude: Wasatch/Mesaverde





#### **KERR-McGEE OIL & GAS ONSHORE LP**

#### **DRILLING PROGRAM**

#### **CASING PROGRAM**

			DESIGN FACTORS							
	SIZE	INT	INTERVAL		WT.	GR.	CPLG.	BURST	COLLAPSE	TENSION
CONDUCTOR	14"	0-40'								
								3,390	1,880	348,000
SURFACE	8-5/8"	0	to	2,370	28.00	IJ-55	LTC	0.81	1.69	5.19
								7,780	6,350	278,000
PRODUCTION	4-1/2"	0	to	9,845	11.60	I-80	BTC	1.90	1.02	2.79

<sup>\*</sup>Burst on suface casing is controlled by fracture gradient as shoe with gas gradient above.

D.F. = 2.27

- 1) Max Anticipated Surf. Press.(MASP) (Surface Casing) = (Pore Pressure at next csg point-(0.22 psi/ft-partial evac gradient x TVD of next csg point))
- 2) MASP (Prod Casing) = Pore Pressure at TD (0.22 psi/ft-partial evac gradient x TD)

(Burst Assumptions: TD = 12.4 ppg) 0.22 psi/ft = gradient for partially evac wellbore (Collapse Assumption: Fully Evacuated Casing, Max MW) (Tension Assumptions: Air Weight of Casing\*Buoy.Fact. of water)

MASP 3,985 psi

3) Maximum Anticipated Bottom Hole Pressure (MABHP) = Pore Pressure at TD

(Burst Assumptions: TD = 12.4 ppg) 0.63 psi/ft = bottomhole gradient

(Collapse Assumption: Fully Evacuated Casing, Max MW) (Tension Assumptions: Air Weight of Casing\*Buoy.Fact. of water)

MABHP 6,106 psi

#### **CEMENT PROGRAM**

	FT. OF FILL	DESCRIPTION	SACKS	EXCESS	WEIGHT	YIELD
SURFACE TAIL	500'	Premium cmt + 2% CaCl	180	60%	15.80	1.15
Option 1		+ 0.25 pps flocele				
TOP OUT CMT (6 jobs)	1,200'	20 gals sodium silicate + Premium cmt	270	0%	15.80	1.15
		+ 2% CaCl + 0.25 pps flocele				
SURFACE		NOTE: If well will circulate water to sur	face, optio	n 2 will be ເ	ıtilized	
Option 2 LEAD	1,870'	65/35 Poz + 6% Gel + 10 pps gilsonite	170	35%	11.00	3.82
		+ 0.25 pps Flocele + 3% salt BWOW				
TAIL	500'	Premium cmt + 2% CaCl	150	35%	15.80	1.15
		+ 0.25 pps flocele				
TOP OUT CMT	as required	Premium cmt + 2% CaCl	as req.		15.80	1.15
PRODUCTION LEAD	4,225'	Premium Lite II +0.25 pps	310	10%	11.00	3.38
		celloflake + 5 pps gilsonite + 10% gel				
		+ 0.5% extender				
TAIL	5,620'	50/50 Poz/G + 10% salt + 2% gel	1,080	10%	14.30	1.31
		+ 0.1% R-3				

<sup>\*</sup>Substitute caliper hole volume plus 0% excess for LEAD if accurate caliper is obtained

#### FLOAT EQUIPMENT & CENTRALIZERS

SURFACE

Guide shoe, 1 jt, insert float. Centralize first 3 joints with bow spring centralizers. Thread lock guide shoe

PRODUCTION

Float shoe, 1 jt, float collar. No centralizers will be used.

#### ADDITIONAL INFORMATION

Test casing head to 750 psi after installing. Test surface casing to 1,500 psi prior to drilling out.

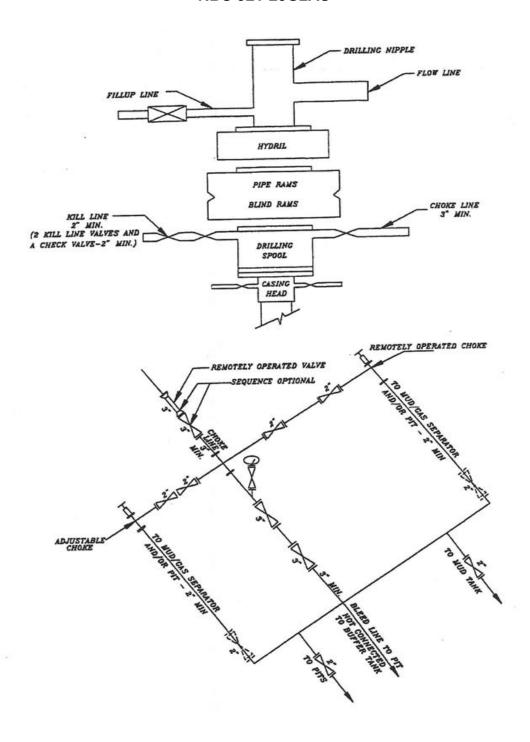
BOPE: 11" 5M with one annular and 2 rams. The BOPE will be installed before the production hole is drilled and tested to 5,000 psi (annular to 2,500 psi) prior to drilling out the surface casing shoe. Record on chart recorder and tour sheet. Function test rams on each trip. Maintain safety valve and inside BOP on rig floor at all times. Most rigs have top drives; however, if used, the Kelly is to be equipped with upper and lower kelly valves.

Surveys will be taken at 1,000' minimum intervals.
Most rigs have PVT System for mud monitoring. If no PVT is available, visual monitoring will be utilized.

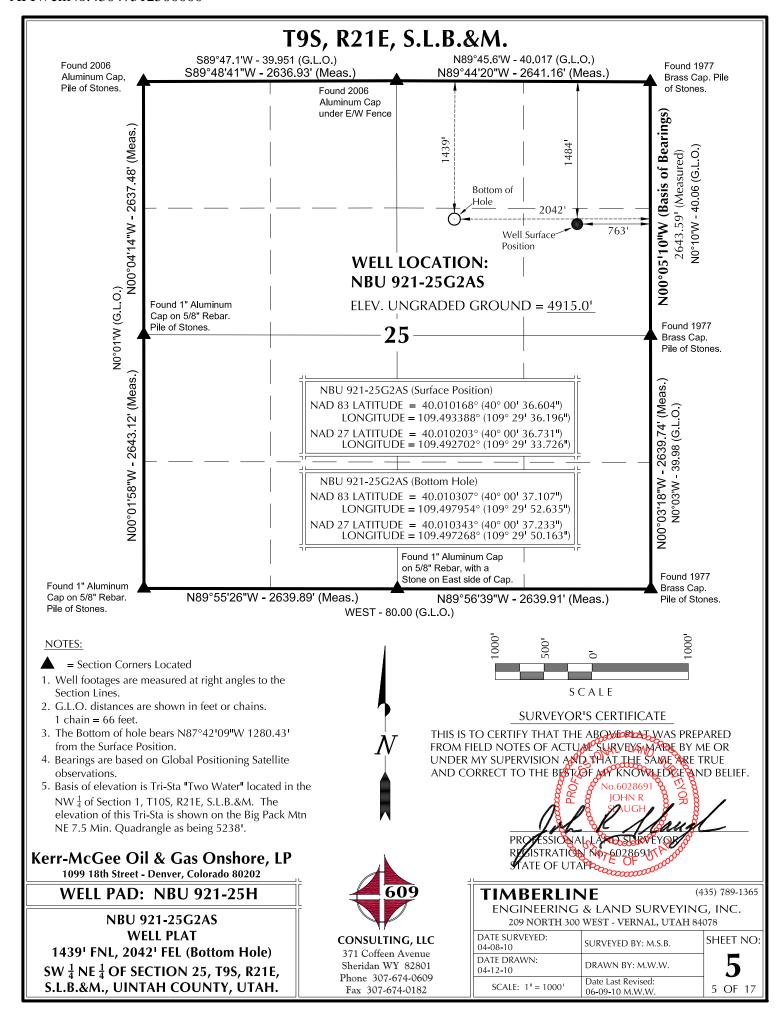
DRILLING ENGINEER:		DATE:	
	John Huycke / Emile Goodwin	<u>-</u>	
DRILLING SUPERINTENDENT:		DATE:	
	John Merkel / Lovel Young		

<sup>\*</sup>Substitute caliper hole volume plus 10% excess for TAIL if accurate caliper is obtained

EXHIBIT A NBU 921-25G2AS



SCHEMATIC DIAGRAM OF 5,000 PSI BOP STACK



	SURFACE POSITION								BOTTOM HOLE						
WELL NAME	NAI LATITUDE	D83 LONGITU	JDE LATITUI	NAD2	27 LONGITUDE	FOOTACES	LATIT	NAD	83 LONG	TUDE	NAD LATITUDE	27 LONGITUDE	FOOTACES		
NBU	40°00'36.425"	109°29'35.			09°29'33.267"	1502' FNL	40°00'3		109°29'3			109°29'35.646"	1958' FNL		
921-25H2DS	40.010118°	109.493260	0° 40.01015.	3° 1	09.492574°	727' FEL	40.0088	370°	109.493	921°	40.008905°	109.493235°	913¹ FEL		
NBU 921-25A3DS	40°00'36.470" 40.010131°	109°29'35. 109.493292		1.	09°29'33.381" 09.492606°	1498' FNL 736' FEL	40°00'4 40.0111		109°29'3 109.493			109°29'33.906" 109.492752°	1110' FNL 776' FEL		
NBU	40°00'36.515"	109°29'35.	965" 40°00'36.	641" 1	09°29'33.494"	1493' FNL	40°00'3	6.080"	109°29'3	37.407"	40°00'36.206"	109°29'34.936"	1538' FNL		
921-25H2AS NBU	40.010143° 40°00'36.560"	109.493324 109°29'36.			09.492637° 09°29'33.611"	745' FEL 1489' FNL	40.0100 40°00'3		109.493 109°29'!			109.493038° 109°29'48.238"	857' FEL 1895' FNL		
921-25G1CS NBU	40.010155°	109.493356	6° 40.01019	1° 1	09.492670°	754' FEL	40.0090	)54°	109.497	419°	40.009089°	109.496733°	1893¹ FEL		
921-25G2AS	40°00'36.604" 40.010168°	109°29'36. 109.493388		1 *	09°29'33.726" 09.492702°	1484' FNL 763' FEL	40°00'3 40.0103		109°29'5 109.497			109°29'50.163" 109.497268°	1439' FNL 2042' FEL		
CICE 143	40°00'36.850" 40.010236°	109°29'37		976" 1	09°29'34.798"	1460' FNL				,	'				
CIGE 142	CIGE 142   40.010236°   109.493686°   40.010271°   109.492999°   846' FEL														
WELL NAME	NORTH	EAST	WELL NAME	NOF			NAME	NORT		EAST	WELL NAMI	E NORTH	EAST		
NBU 921-25H2DS	-454.7'	-185.3	NBU 921-25A3DS	388	8.2' -40.7	NBU	5H2AS	-44.0	0'	-112.3	NBU 921-25G1CS	-400.8	-1,138.6		
WELL NAME	NORTH	EAST	921-23A3D3			921-2	3112A3				921-230103	,			
NBU 921-25G2AS	51.3'	-1,279.4				<b>A</b>	D. I. C	16 05 1	DE 4 DIV 1	CC 1C T	HE EAST LINE				
	OF THE REJ OF SECTION ST. 79S, 721E, SLB, 8.M. WHICH IS TAKEN FROM GLOBAL POSITIONING SATELLITE OBSERVATIONS TO BEAR NO0°03'10"W.  AZ=272, 29750°  N87°42'09"W - 1280.43'  (TO Bottom Hole)  AZ=250.40583°  N87°42'09"W - 1280.43'  (To Bottom Ligor)  S68°54'48'WN Hole  S70°36'21"WN  S68°74'48'WN Hole  S70°36'21"WN  S70°36'2														
Vous Mot	Coo Oil ®	Cas	Hole		_	\$22°,10'19	Bottom Hole	į		30.		, , , , , , , , , , , , , , , , , , , ,			
1099 1	8th Street - De	nver, Color		.r ≕⊧				<b>-</b>			SCALE				
WEL	L PAD - N	NBU 92	21-25H			609		11	MBI				35) 789-1365		
WELL	PAD INTE	RFEREN	CE PLAT	$\neg \bar{\Gamma}$				E			G & LAND S 00 west - veri				
	ELLS - NBU				CONSI	N J <b>LTING, LL</b>	C		SURVEY				SHEET NO:		
	21-25A3DS,					ffeen Avenu		04-07	<b>'-</b> 10		SURVEYED BY	Y: M.S.B.	STILL INO.		
	21-25G1CS &				Sherida	n WY 8280	1	DATE 04-08	Drawn 3-10	:	DRAWN BY: I	E.M.S.	6		
	「ED IN SECT ⟨M., UINTAH					307-674-060 07-674-0182			CALE: 1"	= 60'	Date Last Revi		6 OF 17		
J.L.D.0	avia, OHNIAI		.,		тах Э	01-017-0102					06-11-10 M.V	v.VV.	J J1 1/		

EXISTING GRADE @ CENTER OF WELL PAD = 4914.9' FINISHED GRADE ELEVATION = 4914.4' CUT SLOPES = 1.5:1 FILL SLOPES = 1.5:1 TOTAL WELL PAD AREA = 2.72 ACRES TOTAL DAMAGE AREA = 5.52 ACRES SHRINKAGE FACTOR = 1.10

Kerr-McGee Oil & Gas Onshore, LP 1099 18th Street - Denver, Colorado 80202

#### WELL PAD - NBU 921-25H

SWELL FACTOR = 1.00

WELL PAD - LOCATION LAYOUT NBU 921-25H2DS, NBU 921-25A3DS, NBU 921-25H2AS, NBU 921-25G1CS & NBU 921-25G2AS LOCATED IN SECTION 25, T9S, R21E, S.L.B.&M., UINTAH COUNTY, UTAH



371 Coffeen Avenue

Sheridan, WY 82801

Phone 307-674-0609 Fax 307-674-0182

#### WELL PAD QUANTITIES

TOTAL CUT FOR WELL PAD = 5,515 C.Y. TOTAL FILL FOR WELL PAD = 460 C.Y. TOPSOIL @ 6" DEPTH = 1,429 C.Y. EXCESS MATERIAL = 5,055 C.Y.

#### RESERVE PIT QUANTITIES

TOTAL CUT FOR RESERVE PIT +/- 7,780 CY RESERVE PIT CAPACITY (2' OF FREEBOARD) +/- 29,550 BARRELS

TIMBERLINE (435) 789-1365
ENGINEERING & LAND SURVEYING, INC.
209 NORTH 300 WEST - VERNAL, UTAH 84078

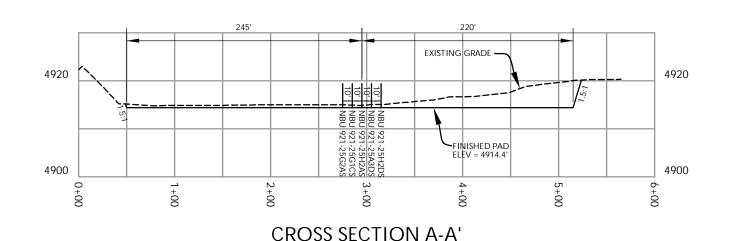
# EXISTING WELL LOCATION PROPOSED WELL LOCATION PROPOSED BOTTOM HOLE LOCATION EXISTING CONTOURS (2' INTERVAL) PROPOSED CONTOURS (2' INTERVAL) PPL PROPOSED PIPELINE EPL EXISTING PIPELINE

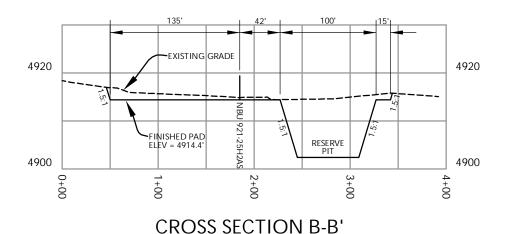




 Scale:
 1"=60"
 Date:
 5/13/10
 SHEET NO:

 TAR REVISED:
 7/7/10
 7 OF 17





#### Kerr-McGee Oil & Gas Onshore, LP

1099 18th Street - Denver, Colorado 80202

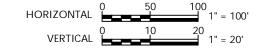
WELL PAD - NBU 921-25H

WELL PAD - CROSS SECTIONS NBU 921-25H2DS, NBU 921-25A3DS, NBU 921-25H2AS, NBU 921-25G1CS & NBU 921-25G2AS LOCATED IN SECTION 25, T9S, R21E, S.L.B.&M., UINTAH COUNTY, UTAH



CONSULTING, LLC 371 Coffeen Avenue Sheridan, WY 82801 Phone 307-674-0609 Fax 307-674-0182 NOTE: CROSS SECTION B-B' DEPICTS

OTE: CROSS SECTION B-B' DEPICTS MAXIMUM RESERVE PIT DEPTH.



TIMBERLINE (435) 789-136
ENGINEERING & LAND SURVEYING, INC.
209 NORTH 300 WEST - VERNAL, UTAH 84078

65	Scale:	1"=100'	Date:	5/13/10	SHEET NO:	
	REVISED:			DJD 7/7/10	8	8 OF 17

'APIWeIINo:43047512500000' K-NANDARGO 2010 31.2814921-3814091-381\_2010031.381\_2011-35104051-381\_2010031.381\_2011-35104051-381\_2010031.381\_2011-35104051-381\_2011-381\_

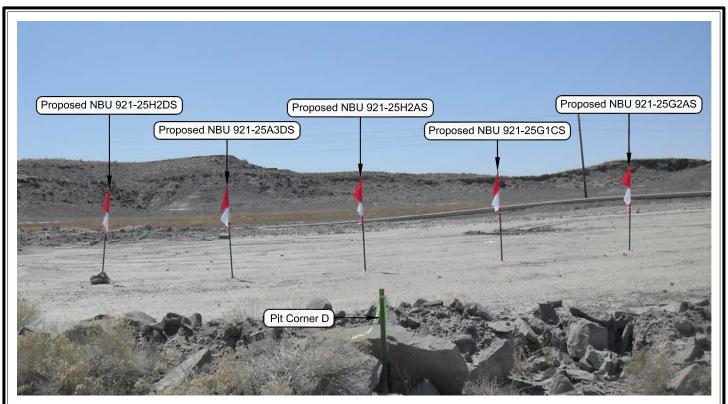


PHOTO VIEW: FROM PIT CORNER D TO LOCATION STAKE

**CAMERA ANGLE: SOUTHWESTERLY** 



PHOTO VIEW: FROM EXISTING ACCESS ROAD

**CAMERA ANGLE: SOUTHEASTERLY** 

#### Kerr-McGee Oil & Gas Onshore, LP

1099 18th Street - Denver, Colorado 80202

#### WELL PAD - NBU 921-25H

**LOCATION PHOTOS** NBU 921-25H2DS, NBU 921-25A3DS, NBU 921-25H2AS, NBU 921-25G1CS & NBU 921-25G2AS LOCATED IN SECTION 25, T9S, R21E, S.L.B.&M., UINTAH COUNTY, UTAH.



#### CONSULTING, LLC

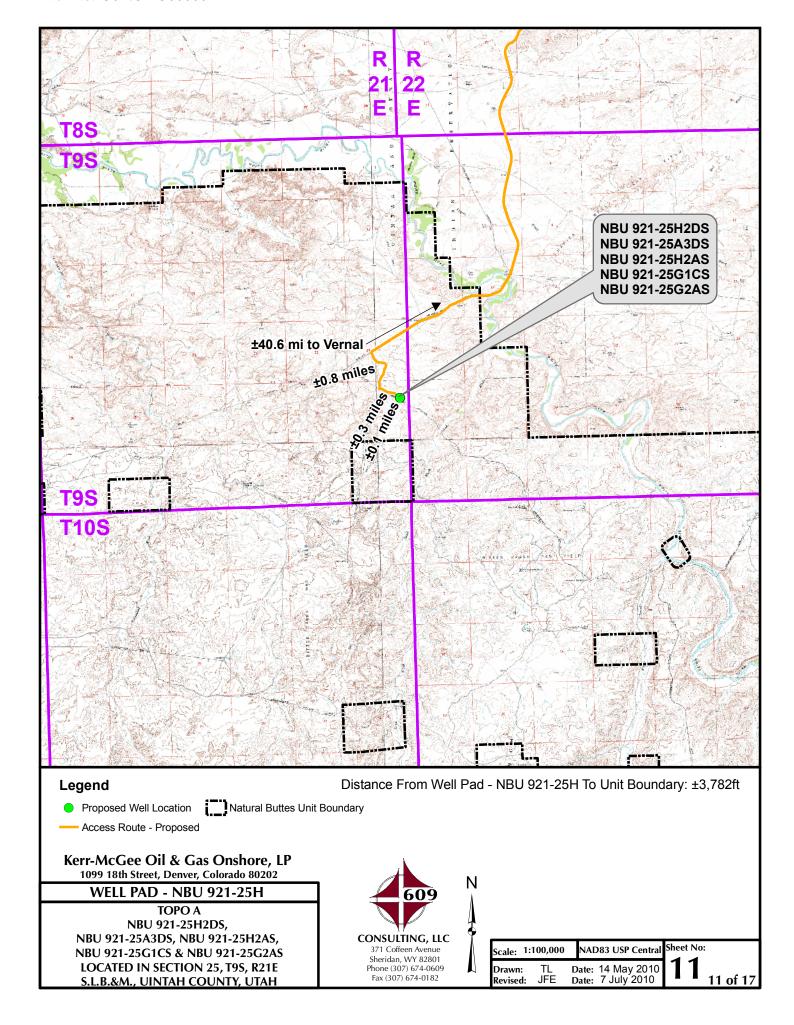
371 Coffeen Avenue Sheridan WY 82801 Phone 307-674-0609 Fax 307-674-0182

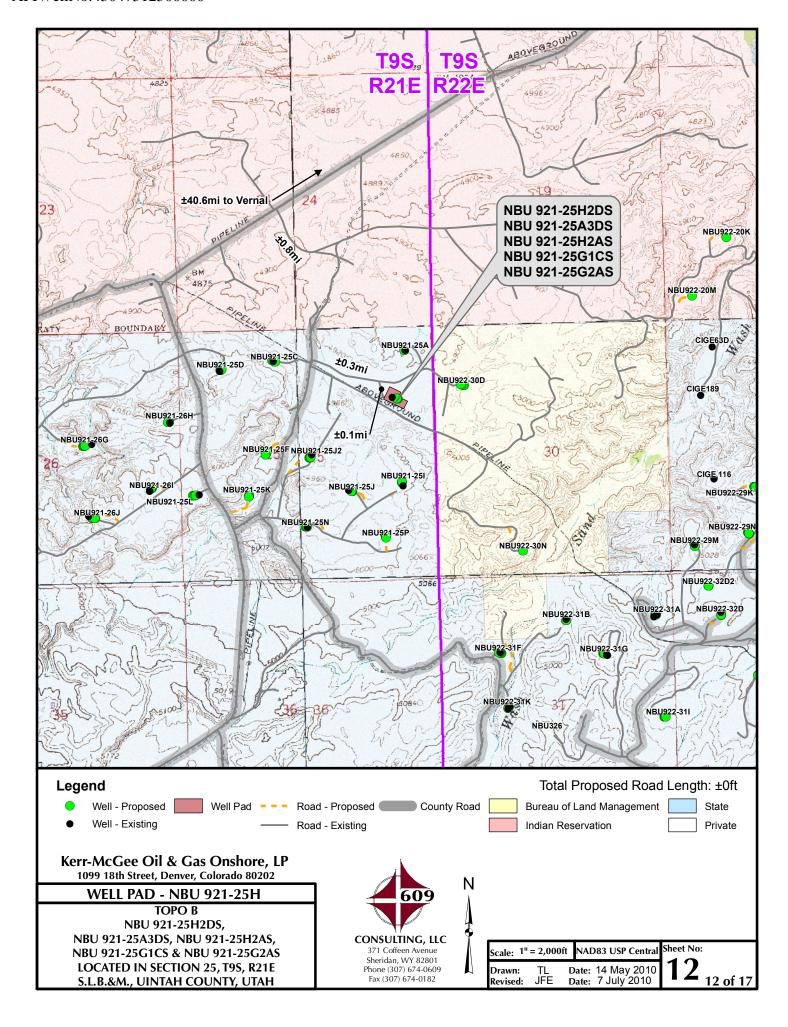
#### TIMBERLINE

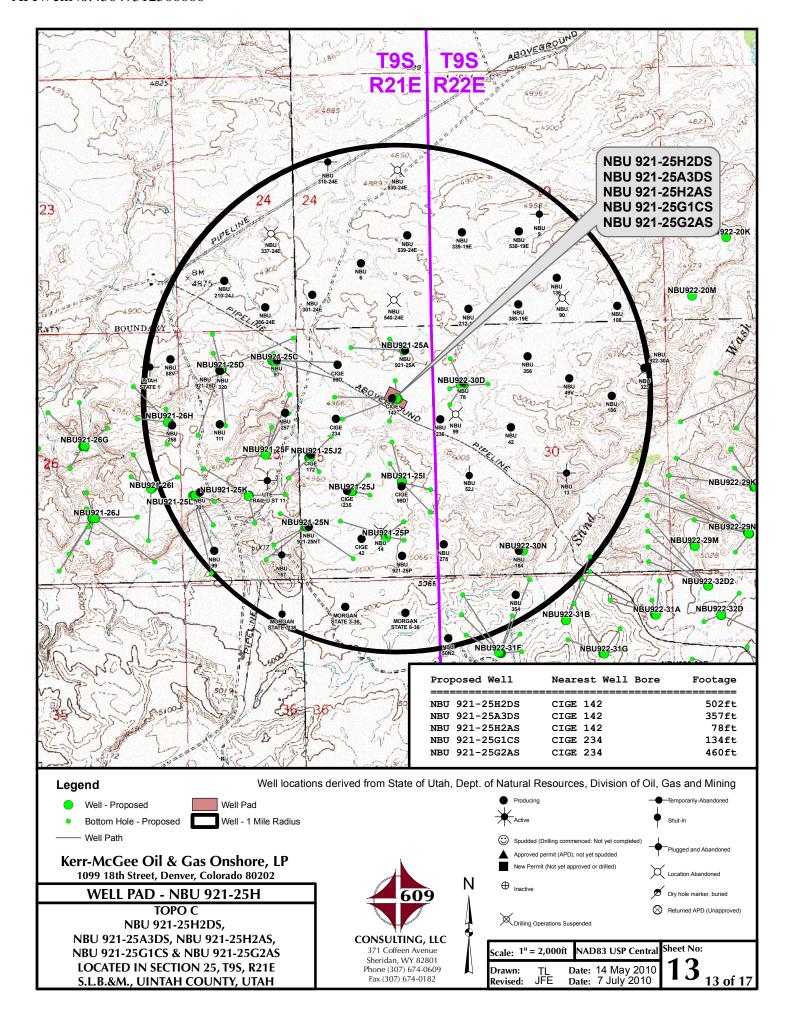
(435) 789-1365

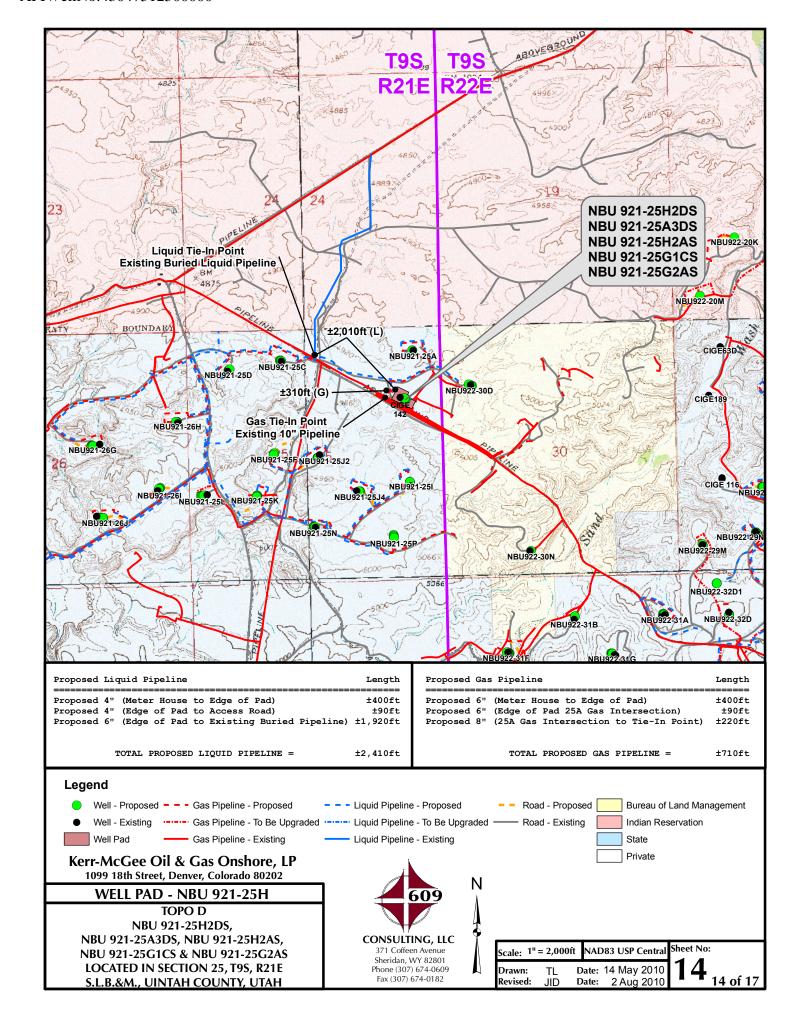
ENGINEERING & LAND SURVEYING, INC. 209 NORTH 300 WEST - VERNAL, UTAH 84078

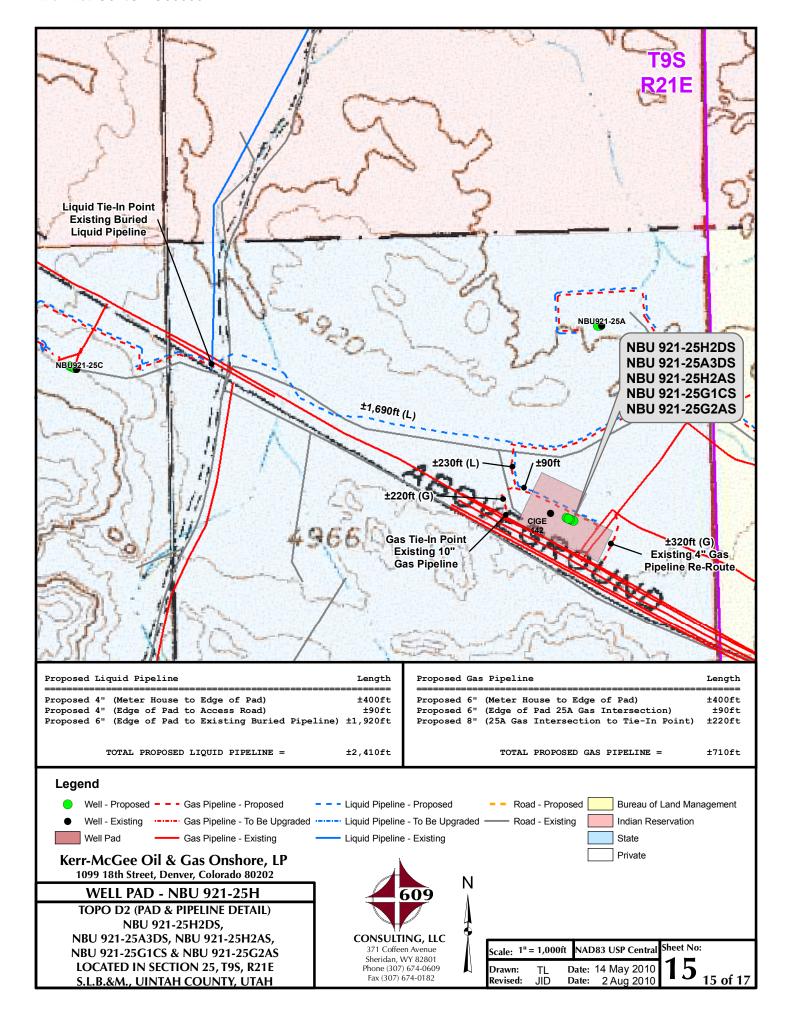
ı	20711011111300	WEST - VERGITE, CITILITY	0,0
	DATE PHOTOS TAKEN: 04-07-10	PHOTOS TAKEN BY: M.S.B.	SHEET NO:
	DATE DRAWN: 04-08-10	DRAWN BY: E.M.S.	10
	Date Last Revised: 06-11-10	0 M.W.W.	10 OF 17

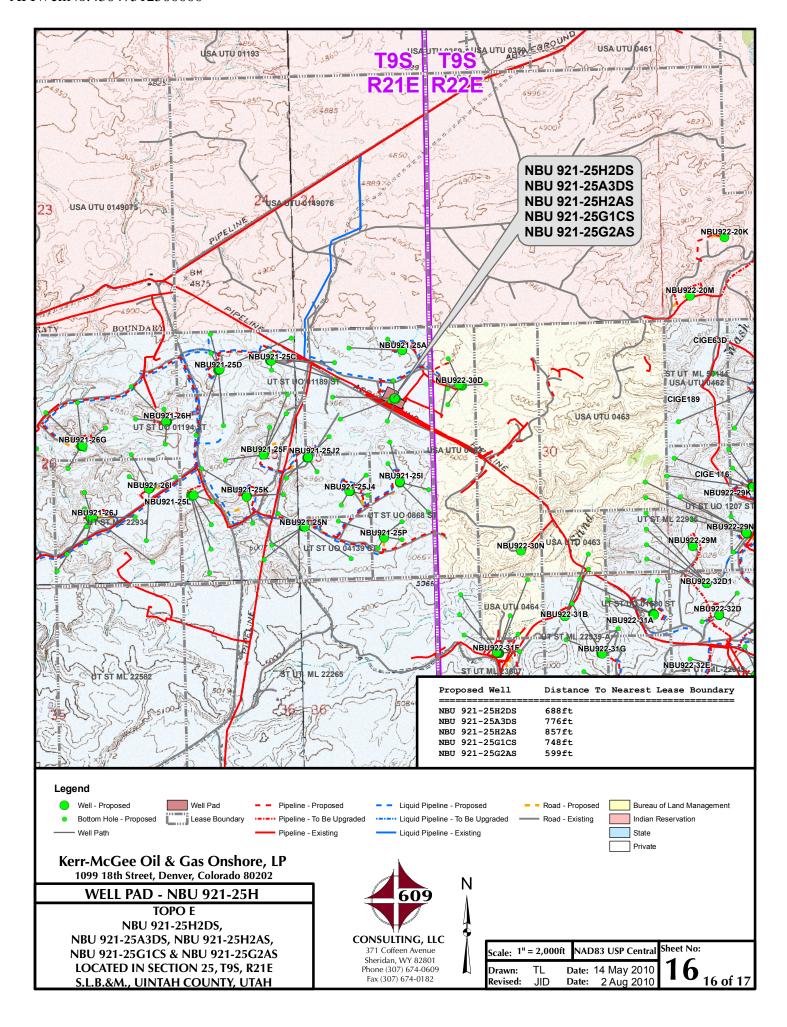












#### Kerr-McGee Oil & Gas Onshore, LP WELL PAD – NBU 921-25H WELLS – NBU 921-25H2DS, NBU 921-25A3DS, NBU 921-25H2AS, NBU 921-25G1CS & NBU 921-25G2AS Section 25, T9S, R21E, S.L.B.&M.

From the intersection of U.S. Highway 40 and 500 East Street in Vernal, Utah proceed in an easterly then southerly direction along U.S. Highway 40 approximately 3.3 miles to the junction of State Highway 45; exit right and proceed in a southerly direction along State Highway 45 approximately 20.2 miles to the junction of the Glen Bench Road (County B Road 3260). Exit right and proceed in a southwesterly direction along the Glen Bench Road approximately 17.1 miles to a service road to the southeast. Exit left and proceed in a southeasterly then easterly then southerly direction along service road approximately 0.8 miles to a second service road to the southeast. Exit left and proceed in a southeasterly direction along second service road approximately 0.3 miles to an existing access road to the southeast. Exit right and proceed in a southeasterly direction along the existing access road approximately 0.1 miles to the proposed well location.

Total distance from Vernal, Utah to the proposed well location is approximately 41.8 miles in a southerly direction.

-600

600

Vertical Section at 272.28° (1200 ft/in)

1200

1800

2400

Project: Uintah County, UT UTM12

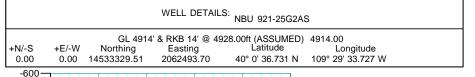
Site: NBU 921-25H Pad Well: NBU 921-25G2AS

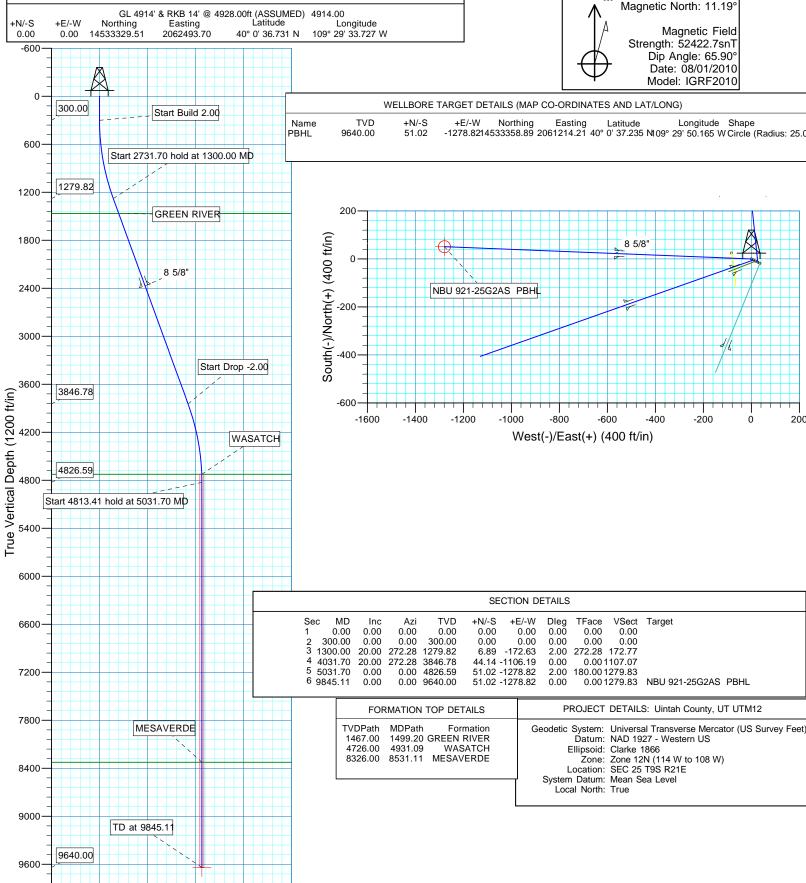
Wellbore: OH Design: Plan #1



#### Kerr McGee Oil and Gas Onshore LP







Plan: Plan #1 (NBU 921-25G2AS/OH)

Created By: Robert H. Scott Date: 19:39, August 01 2010



## **Kerr McGee Oil and Gas Onshore LP**

Uintah County, UT UTM12 NBU 921-25H Pad NBU 921-25G2AS

ОН

Plan: Plan #1

### **Standard Planning Report**

01 August, 2010





## **SDI**Planning Report



Database: EDM5000-RobertS-Local

Company: Kerr McGee Oil and Gas Onshore LP

Project: Uintah County, UT UTM12

 Site:
 NBU 921-25H Pad

 Well:
 NBU 921-25G2AS

Wellbore: OH
Design: Plan #1

**Local Co-ordinate Reference:** 

TVD Reference:

@ 4928.00ft (ASSUMED)

MD Reference: GL 4914' & RKB 14'
@ 4928.00ft (ASSUMED)

North Reference: Tr

Survey Calculation Method:

True
Minimum Curvature

Well NBU 921-25G2AS

GL 4914' & RKB 14'

Project Uintah County, UT UTM12

Map System: Universal Transverse Mercator (US Survey Feet)

 Geo Datum:
 NAD 1927 - Western US

 Map Zone:
 Zone 12N (114 W to 108 W)

System Datum: Mean Sea Level

Site NBU 921-25H Pad, SEC 25 T9S R21E

Northing: 14,533,311.91 usft 40° 0' 36.551 N Site Position: Latitude: From: Lat/Long Easting: 2,062,529.85 usft Longitude: 109° 29' 33.266 W **Position Uncertainty:** 0.00 ft Slot Radius: 13.200 in **Grid Convergence:** 0.97°

Well NBU 921-25G2AS, 1484' FNL 763' FEL

 Well Position
 +N/-S
 18.21 ft
 Northing:
 14,533,329.51 usft
 Latitude:
 40° 0' 36.731 N

**+E/-W** -35.85 ft **Easting:** 2,062,493.70 usft **Longitude:** 109° 29' 33.727 W

Position Uncertainty0.00 ftWellhead Elevation:Ground Level:4,914.00 ft

ОН Wellbore Magnetics Declination Dip Angle Field Strength **Model Name** Sample Date (°) (°) (nT) IGRF2010 08/01/2010 11.19 65.90 52,423

Plan #1 Design Audit Notes: PLAN 0.00 Version: Phase: Tie On Depth: +N/-S Vertical Section: Depth From (TVD) +E/-W Direction (ft) (ft) (ft) (°) 0.00 0.00 0.00 272.28

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,300.00	20.00	272.28	1,279.82	6.89	-172.63	2.00	2.00	0.00	272.28	
4,031.70	20.00	272.28	3,846.78	44.14	-1,106.19	0.00	0.00	0.00	0.00	
5,031.70	0.00	0.00	4,826.59	51.02	-1,278.82	2.00	-2.00	0.00	180.00	
9,845.11	0.00	0.00	9,640.00	51.02	-1,278.82	0.00	0.00	0.00	0.00	NBU 921-25G2AS PI



Company:

#### SDI Planning Report



EDM5000-RobertS-Local Database:

Kerr McGee Oil and Gas Onshore LP

Project: Uintah County, UT UTM12

NBU 921-25H Pad Site: Well: NBU 921-25G2AS

Wellbore: ОН Design: Plan #1 Local Co-ordinate Reference:

TVD Reference:

MD Reference:

North Reference:

**Survey Calculation Method:** 

Well NBU 921-25G2AS GL 4914' & RKB 14'

@ 4928.00ft (ASSUMED) GL 4914' & RKB 14' @ 4928.00ft (ASSUMED)

True

nned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build									
400.00	2.00	272.28	399.98	0.07	-1.74	1.75	2.00	2.00	0.00
500.00	4.00	272.28	499.84	0.28	-6.97	6.98	2.00	2.00	0.00
600.00	6.00	272.28	599.45	0.63	-15.68	15.69	2.00	2.00	0.00
700.00	8.00	272.28	698.70	1.11	-27.86	27.88	2.00	2.00	0.00
800.00	10.00	272.28	797.47	1.74	-43.49	43.52	2.00	2.00	0.00
900.00	12.00	272.28	895.62	2.50	-62.55	62.60	2.00	2.00	0.00
1,000.00	14.00	272.28	993.06	3.39	-85.03	85.10	2.00	2.00	0.00
1,100.00	16.00	272.28	1,089.64	4.42	-110.89	110.98	2.00	2.00	0.00
1,200.00	18.00	272.28	1,185.27	5.59	-140.10	140.21	2.00	2.00	0.00
1,300.00	20.00	272.28	1,279.82	6.89	-172.63	172.77	2.00	2.00	0.00
			1,279.02	0.09	-172.00	172.77	2.00	2.00	0.00
1,400.00	<b>70 hold at 1300.00</b> 20.00	272.28	1,373.78	8.25	-206.81	206.97	0.00	0.00	0.00
1,499.20	20.00	272.28	1,467.00	9.60	-240.71	240.90	0.00	0.00	0.00
GREEN RIV		212.20	1,407.00	3.00	-240.71	240.90	0.00	0.00	0.00
		272.20	1 467 75	0.61	240.00	244 47	0.00	0.00	0.00
1,500.00	20.00	272.28	1,467.75	9.61	-240.98	241.17	0.00	0.00	0.00
1,600.00	20.00	272.28	1,561.72	10.98	-275.16	275.37	0.00	0.00	0.00
1,700.00	20.00	272.28	1,655.69	12.34	-309.33	309.58	0.00	0.00	0.00
1,800.00	20.00	272.28	1,749.66	13.71	-343.50	343.78	0.00	0.00	0.00
1,900.00	20.00	272.28	1,843.63	15.07	-377.68	377.98	0.00	0.00	0.00
2,000.00	20.00	272.28	1,937.60	16.43	-411.85	412.18	0.00	0.00	0.00
2,100.00	20.00	272.28	2,031.57	17.80	-446.03	446.38	0.00	0.00	0.00
2,200.00	20.00	272.28	2,125.54	19.16	-480.20	480.59	0.00	0.00	0.00
2,300.00	20.00	272.28	2,219.51	20.52	-514.38	514.79	0.00	0.00	0.00
2,400.00	20.00	272.28	2,313.48	21.89	-548.55	548.99	0.00	0.00	0.00
2,460.15	20.00	272.28	2,370.00	22.71	-569.11	569.56	0.00	0.00	0.00
8 5/8"	20.00	272.20	2,070.00	22.7 1	000.11	000.00	0.00	0.00	0.00
2,500.00	20.00	272.28	2,407.45	23.25	-582.73	583.19	0.00	0.00	0.00
2,600.00	20.00	272.28	2,501.42	24.61	-562.73 -616.90	617.39	0.00	0.00	0.00
2,700.00	20.00	272.28	2,595.39	25.98	-651.08	651.60	0.00	0.00	0.00
2,800.00	20.00	272.28	2,689.35	27.34	-685.25	685.80	0.00	0.00	0.00
2,900.00	20.00	272.28	2,783.32	28.70	-719.43	720.00	0.00	0.00	0.00
3,000.00	20.00	272.28	2,877.29	30.07	-753.60	754.20	0.00	0.00	0.00
3,100.00	20.00	272.28	2,971.26	31.43	-787.78	788.40	0.00	0.00	0.00
3,200.00	20.00	272.28	3,065.23	32.79	-821.95	822.61	0.00	0.00	0.00
3,300.00	20.00	272.28	3,159.20	34.16	-856.13	856.81	0.00	0.00	0.00
3,400.00	20.00	272.28	3,253.17	35.52	-890.30	891.01	0.00	0.00	0.00
3,500.00	20.00	272.28	3,347.14	36.89	-924.48	925.21	0.00	0.00	0.00
3,600.00	20.00	272.28	3,441.11	38.25	-958.65	959.41	0.00	0.00	0.00
3,700.00	20.00	272.28	3,535.08	39.61	-992.83	993.62	0.00	0.00	0.00
3,800.00	20.00	272.28	3,629.05	40.98	-1,027.00	1,027.82	0.00	0.00	0.00
3,900.00	20.00	272.28	3,723.02	42.34	-1,061.18	1,062.02	0.00	0.00	0.00
4,000.00	20.00	272.28	3,816.99	43.70	-1,095.35	1,096.22	0.00	0.00	0.00
4,031.70	20.00	272.28	3,846.78	44.14	-1,106.19	1,107.07	0.00	0.00	0.00
Start Drop		0== 0:	0.011.01	,		4 465 55			
4,100.00	18.63	272.28	3,911.23	45.04	-1,128.76	1,129.66	2.00	-2.00	0.00
4,200.00	16.63	272.28	4,006.52	46.24	-1,159.03	1,159.95	2.00	-2.00	0.00



#### **SDI** Planning Report



Database: EDM5000-RobertS-Local

Company: Kerr McGee Oil and Gas Onshore LP

Project: Uintah County, UT UTM12

 Site:
 NBU 921-25H Pad

 Well:
 NBU 921-25G2AS

Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference:

TVD Reference:

MD Reference:

North Reference: Survey Calculation Method: Well NBU 921-25G2AS GL 4914' & RKB 14'

@ 4928.00ft (ASSUMED) GL 4914' & RKB 14' @ 4928.00ft (ASSUMED)

True

ned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,300.00	14.63	272.28	4,102.82	47.32	-1,185.95	1,186.90	2.00	-2.00	0.00
4,400.00	12.63	272.28	4,200.00	48.26	-1,209.51	1,210.47	2.00	-2.00	0.00
4,500.00	10.63	272.28	4,297.94	49.06	-1,229.65	1,230.63	2.00	-2.00	0.00
	8.63						2.00		0.00
4,600.00	0.03	272.28	4,396.52	49.73	-1,246.38	1,247.37	2.00	-2.00	0.00
4,700.00	6.63	272.28	4,495.63	50.26	-1,259.65	1,260.65	2.00	-2.00	0.00
4,800.00	4.63	272.28	4,595.14	50.65	-1,269.46	1,270.47	2.00	-2.00	0.00
4.900.00	2.63	272.28	4.694.94	50.90	-1,275.79	1,276.81	2.00	-2.00	0.00
4,931.09	2.01	272.28	4,726.00	50.95	-1,277.05	1,278.07	2.00	-2.00	0.00
	2.01	212.20	4,720.00	50.95	-1,277.03	1,270.07	2.00	-2.00	0.00
WASATCH									
5,000.00	0.63	272.28	4,794.89	51.02	-1,278.64	1,279.66	2.00	-2.00	0.00
5,031.70	0.00	0.00	4,826.59	51.02	-1,278.82	1,279.83	2.00	-2.00	0.00
			4,020.59	31.02	-1,270.02	1,279.03	2.00	-2.00	0.00
	11 hold at 5031.70								
5,100.00	0.00	0.00	4,894.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
5,200.00	0.00	0.00	4,994.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
5,300.00	0.00	0.00	5,094.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
5,400.00	0.00	0.00	5,194.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
5,500.00	0.00	0.00	5,294.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
5,600.00	0.00	0.00	5,394.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
5,700.00	0.00	0.00	5,494.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
5,800.00	0.00	0.00	5,594.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
5,900.00	0.00	0.00	5,694.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
					,				
6,000.00	0.00	0.00	5,794.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
6,100.00	0.00	0.00	5,894.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
6,200.00	0.00	0.00	5,994.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
6,300.00	0.00	0.00	6,094.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
6,400.00	0.00	0.00	6,194.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
6,500.00	0.00	0.00	6,294.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
6,600.00	0.00	0.00	6,394.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
6,700.00	0.00	0.00	6,494.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
6,800.00	0.00	0.00	6,594.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
6,900.00	0.00	0.00	6,694.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
7 000 00	0.00	0.00	0.704.00	E4.00	4 070 00	4 070 00	0.00	0.00	0.00
7,000.00	0.00	0.00	6,794.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
7,100.00	0.00	0.00	6,894.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
7,200.00	0.00	0.00	6,994.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
7,300.00	0.00	0.00	7,094.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
7,400.00	0.00	0.00	7,194.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
7,500.00	0.00	0.00	7,294.89	51.02	-1.278.82	1,279.83	0.00	0.00	0.00
,			,		,	,			
7,600.00	0.00	0.00	7,394.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
7,700.00	0.00	0.00	7,494.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
7,800.00	0.00	0.00	7,594.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
7,900.00	0.00	0.00	7,694.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
8,000.00	0.00	0.00	7,794.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
,			,						
8,100.00	0.00	0.00	7,894.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
8,200.00	0.00	0.00	7,994.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
8,300.00	0.00	0.00	8,094.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
8,400.00	0.00	0.00	8,194.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
8 500 00	0.00	0.00	8,294.89	51.02	1 270 02	1 270 02	0.00	0.00	0.00
8,500.00		0.00	,		-1,278.82	1,279.83			
8,531.11	0.00	0.00	8,326.00	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
MESAVERD	DE								
8,600.00	0.00	0.00	8,394.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
8,700.00	0.00	0.00	8,494.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
8,800.00	0.00	0.00	8,594.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00



## **Kerr McGee Oil and Gas Onshore LP**

Uintah County, UT UTM12 NBU 921-25H Pad NBU 921-25G2AS

OH

Plan: Plan #1

### **Standard Planning Report - Geographic**

01 August, 2010







EDM5000-RobertS-Local Database:

Company: Kerr McGee Oil and Gas Onshore LP

Project: Uintah County, UT UTM12

NBU 921-25H Pad Site: Well: NBU 921-25G2AS

Wellbore: ОН Design: Plan #1 **Local Co-ordinate Reference:** 

**TVD Reference:** 

MD Reference:

North Reference:

Survey Calculation Method:

Well NBU 921-25G2AS

GL 4914' & RKB 14'

@ 4928.00ft (ASSUMED) GL 4914' & RKB 14'

@ 4928.00ft (ASSUMED)

Minimum Curvature

Uintah County, UT UTM12 Project

Map System:

NAD 1927 - Western US Geo Datum: Map Zone: Zone 12N (114 W to 108 W)

Universal Transverse Mercator (US Survey Feet) System Datum: Mean Sea Level

Site NBU 921-25H Pad, SEC 25 T9S R21E

14,533,311.91 usft Site Position: Northing: Latitude: 40° 0' 36.551 N 109° 29' 33.266 W Lat/Long 2,062,529.85 usft Easting: Longitude: From: 0.97 0.00 ft Slot Radius: 13.200 in **Position Uncertainty: Grid Convergence:** 

Well NBU 921-25G2AS, 1484' FNL 763' FEL **Well Position** 40° 0' 36.731 N +N/-S 0.00 ft Northing: 14,533,329.51 usft Latitude: +E/-W 0.00 ft 2,062,493.70 usft Longitude: 109° 29' 33.727 W Easting: 0.00 ft 4,914.00 ft **Position Uncertainty** Wellhead Elevation: **Ground Level:** 

Wellbore ОН Magnetics **Model Name** Sample Date Declination Dip Angle Field Strength (nT) (°) IGRF2010 08/01/2010 65.90 11.19 52,423

Plan #1 Design **Audit Notes:** PLAN 0.00 Version: Phase: Tie On Depth: +N/-S Vertical Section: Depth From (TVD) +E/-W Direction (ft) (ft) (ft) (°) 0.00 0.00 0.00 272.28

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,300.00	20.00	272.28	1,279.82	6.89	-172.63	2.00	2.00	0.00	272.28	
4,031.70	20.00	272.28	3,846.78	44.14	-1,106.19	0.00	0.00	0.00	0.00	
5,031.70	0.00	0.00	4,826.59	51.02	-1,278.82	2.00	-2.00	0.00	180.00	
9,845.11	0.00	0.00	9,640.00	51.02	-1,278.82	0.00	0.00	0.00	0.00	NBU 921-25G2AS PI





Database: EDM5000-RobertS-Local

Company: Kerr McGee Oil and Gas Onshore LP

Project: Uintah County, UT UTM12

 Site:
 NBU 921-25H Pad

 Well:
 NBU 921-25G2AS

Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference:

TVD Reference:

MD Reference:

North Reference: Survey Calculation Method: GL 4914' & RKB 14' @ 4928.00ft (ASSUMED) GL 4914' & RKB 14' @ 4928.00ft (ASSUMED)

Well NBU 921-25G2AS

True

Planned Survey	1								
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	14,533,329.51	2,062,493.70	40° 0' 36.731 N	109° 29' 33.727 W
100.00	0.00	0.00	100.00	0.00	0.00	14,533,329.51	2,062,493.70	40° 0' 36.731 N	109° 29' 33.727 W
200.00		0.00	200.00	0.00	0.00	14,533,329.51	2,062,493.70	40° 0' 36.731 N	109° 29' 33.727 W
300.00	0.00	0.00	300.00	0.00	0.00	14,533,329.51	2,062,493.70	40° 0' 36.731 N	109° 29' 33.727 W
Start Bu									
400.00		272.28	399.98	0.07	-1.74	14,533,329.55	2,062,491.95	40° 0' 36.731 N	109° 29' 33.750 W
500.00		272.28	499.84	0.28	-6.97	14,533,329.67	2,062,486.72	40° 0' 36.734 N	109° 29' 33.817 W
600.00		272.28	599.45	0.63	-15.68	14,533,329.87	2,062,478.01	40° 0' 36.737 N	109° 29' 33.929 W
700.00		272.28	698.70	1.11	-27.86	14,533,330.15	2,062,465.83	40° 0' 36.742 N	109° 29' 34.085 W
800.00 900.00		272.28 272.28	797.47 895.62	1.74 2.50	-43.49 -62.55	14,533,330.51	2,062,450.19	40° 0' 36.748 N	109° 29' 34.286 W
		272.28	993.06		-62.55 -85.03	14,533,330.95	2,062,431.11	40° 0' 36.755 N	109° 29' 34.531 W
1,000.00 1,100.00		272.28	1,089.64	3.39 4.42	-65.03 -110.89	14,533,331.47 14,533,332.06	2,062,408.62 2,062,382.75	40° 0' 36.764 N 40° 0' 36.775 N	109° 29' 34.820 W 109° 29' 35.153 W
1,200.00		272.28	1,089.04	5.59	-140.10	14,533,332.73	2,062,353.52	40° 0' 36.786 N	109° 29' 35.528 W
1,300.00		272.28	1,279.82	6.89	-172.63	14,533,333.48	2,062,320.98	40° 0' 36.799 N	109° 29' 35.946 W
	31.70 hold at 1		1,270.02	0.00	172.00	14,000,000.40	2,002,020.00	40 0 00.700 14	100 20 00.040 **
1,400.00		272.28	1,373.78	8.25	-206.81	14,533,334.27	2,062,286.78	40° 0' 36.812 N	109° 29' 36.385 W
1,499.20		272.28	1,467.00	9.60	-240.71	14,533,335.04	2,062,252.87	40° 0' 36.826 N	109° 29' 36.821 W
GREEN		212.20	1,407.00	9.00	-2-10.71	14,000,000.04	2,002,232.01	40 0 30.020 N	109 29 30.021 VV
1.500.00		272.28	1,467.75	9.61	-240.98	14,533,335.05	2,062,252.59	40° 0' 36.826 N	109° 29' 36.825 W
1,600.00		272.28	1,561.72	10.98	-275.16	14,533,335.84	2,062,218.40	40° 0' 36.839 N	109° 29' 37.264 W
1,700.00		272.28	1,655.69	12.34	-309.33	14,533,336.62	2,062,184.21	40° 0' 36.853 N	109° 29' 37.703 W
1,800.00		272.28	1,749.66	13.71	-343.50	14,533,337.41	2,062,150.01	40° 0' 36.866 N	109° 29' 38.143 W
1,900.00		272.28	1,843.63	15.07	-377.68	14,533,338.19	2,062,115.82	40° 0' 36.880 N	109° 29' 38.582 W
2,000.00		272.28	1,937.60	16.43	-411.85	14,533,338.98	2,062,081.63	40° 0' 36.893 N	109° 29' 39.021 W
2,100.00		272.28	2,031.57	17.80	-446.03	14,533,339.76	2,062,047.43	40° 0' 36.907 N	109° 29' 39.460 W
2,200.00		272.28	2,125.54	19.16	-480.20	14,533,340.55	2,062,013.24	40° 0' 36.920 N	109° 29' 39.900 W
2,300.00		272.28	2,219.51	20.52	-514.38	14,533,341.33	2,061,979.05	40° 0' 36.934 N	109° 29' 40.339 W
2,400.00		272.28	2,313.48	21.89	-548.55	14,533,342.12	2,061,944.85	40° 0' 36.947 N	109° 29' 40.778 W
2,460.15		272.28	2,370.00	22.71	-569.11	14,533,342.59	2,061,924.29	40° 0' 36.955 N	109° 29' 41.042 W
8 5/8"									
2,500.00	20.00	272.28	2,407.45	23.25	-582.73	14,533,342.90	2,061,910.66	40° 0' 36.961 N	109° 29' 41.217 W
2,600.00	20.00	272.28	2,501.42	24.61	-616.90	14,533,343.69	2,061,876.47	40° 0' 36.974 N	109° 29' 41.657 W
2,700.00	20.00	272.28	2,595.39	25.98	-651.08	14,533,344.47	2,061,842.28	40° 0' 36.987 N	109° 29' 42.096 W
2,800.00	20.00	272.28	2,689.35	27.34	-685.25	14,533,345.26	2,061,808.08	40° 0' 37.001 N	109° 29' 42.535 W
2,900.00	20.00	272.28	2,783.32	28.70	-719.43	14,533,346.04	2,061,773.89	40° 0' 37.014 N	109° 29' 42.975 W
3,000.00	20.00	272.28	2,877.29	30.07	-753.60	14,533,346.83	2,061,739.70	40° 0' 37.028 N	109° 29' 43.414 W
3,100.00		272.28	2,971.26	31.43	-787.78	14,533,347.61	2,061,705.50	40° 0' 37.041 N	109° 29' 43.853 W
3,200.00		272.28	3,065.23	32.79	-821.95	14,533,348.40	2,061,671.31	40° 0' 37.055 N	109° 29' 44.292 W
3,300.00	20.00	272.28	3,159.20	34.16	-856.13	14,533,349.18	2,061,637.12	40° 0' 37.068 N	109° 29' 44.732 W
3,400.00		272.28	3,253.17	35.52	-890.30	14,533,349.97	2,061,602.93	40° 0' 37.082 N	109° 29' 45.171 W
3,500.00		272.28	3,347.14	36.89	-924.48	14,533,350.76	2,061,568.73	40° 0' 37.095 N	109° 29' 45.610 W
3,600.00		272.28	3,441.11	38.25	-958.65	14,533,351.54	2,061,534.54	40° 0' 37.109 N	109° 29' 46.049 W
3,700.00		272.28	3,535.08	39.61	-992.83	14,533,352.33	2,061,500.35	40° 0' 37.122 N	109° 29' 46.489 W
3,800.00		272.28	3,629.05	40.98	-1,027.00	14,533,353.11	2,061,466.15	40° 0' 37.136 N	109° 29' 46.928 W
3,900.00		272.28	3,723.02	42.34	-1,061.18	14,533,353.90	2,061,431.96	40° 0' 37.149 N	109° 29' 47.367 W
4,000.00		272.28	3,816.99	43.70	-1,095.35 1,106.10	14,533,354.68	2,061,397.77	40° 0' 37.163 N	109° 29' 47.807 W
4,031.70		272.28	3,846.78	44.14	-1,106.19	14,533,354.93	2,061,386.93	40° 0' 37.167 N	109° 29' 47.946 W
Start Dro	-	272.20	3 011 22	45 O4	1 120 76	14 533 255 45	2.061.264.24	40° 0' 27 476 N	100° 50' 40 556 141
4,100.00 4,200.00		272.28 272.28	3,911.23	45.04 46.24	-1,128.76 -1,159.03	14,533,355.45	2,061,364.34 2,061,334.06	40° 0' 37.176 N 40° 0' 37.188 N	109° 29' 48.236 W 109° 29' 48.625 W
4,300.00		272.28	4,006.52 4,102.82	46.24 47.32	-1,159.05 -1,185.95	14,533,356.14 14,533,356.76	2,061,307.12	40° 0' 37.198 N	109° 29' 48.971 W
4,300.00	14.03	212.20	4,102.02	41.32	-1,100.80	14,000,000.70	2,001,307.12	+U U 31.180 N	103 23 40.3/ 1 W





Database: EDM5000-RobertS-Local

Company: Kerr McGee Oil and Gas Onshore LP

Project: Uintah County, UT UTM12

 Site:
 NBU 921-25H Pad

 Well:
 NBU 921-25G2AS

Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference:

TVD Reference:

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North Reference: Survey Calculation Method: Well NBU 921-25G2AS GL 4914' & RKB 14'

GL 4914' & RKB 14'
@ 4928.00ft (ASSUMED)
GL 4914' & RKB 14'
@ 4928.00ft (ASSUMED)

True

nned Survey									
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Map Northing	Map Easting	1 -424 - 1	
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)	Latitude	Longitude
4,400.00	12.63	272.28	4,200.00	48.26	-1,209.51	14,533,357.30	2,061,283.55	40° 0' 37.207 N	109° 29' 49.27
4,500.00	10.63	272.28	4,297.94	49.06	-1,229.65	14,533,357.77	2,061,263.39	40° 0' 37.215 N	109° 29' 49.53
4,600.00	8.63	272.28	4,396.52	49.73	-1,246.38	14,533,358.15	2,061,246.66	40° 0' 37.222 N	109° 29' 49.74
4,700.00	6.63	272.28	4,495.63	50.26	-1,259.65	14,533,358.46	2,061,233.38	40° 0' 37.227 N	109° 29' 49.9
4,800.00	4.63	272.28	4,595.14	50.65	-1,269.46	14,533,358.68	2,061,223.57	40° 0' 37.231 N	109° 29' 50.04
4,900.00	2.63	272.28	4,694.94	50.90	-1,275.79	14,533,358.83	2,061,217.23	40° 0' 37.234 N	109° 29' 50.12
4,931.09	2.01	272.28	4,726.00	50.95	-1,277.05	14,533,358.86	2,061,215.97	40° 0' 37.234 N	109° 29' 50.14
WASATO									
5,000.00	0.63	272.28	4,794.89	51.02	-1,278.64	14,533,358.89	2,061,214.38	40° 0' 37.235 N	109° 29' 50.16
5,031.70	0.00	0.00	4,826.59	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.16
	3.41 hold at 5								
5,100.00	0.00	0.00	4,894.89	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.16
5,200.00	0.00	0.00	4,994.89	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.16
5,300.00	0.00	0.00	5,094.89	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.16
5,400.00	0.00	0.00	5,194.89	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.16
5,500.00	0.00	0.00	5,294.89	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.10
5,600.00	0.00	0.00	5,394.89	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.10
5,700.00	0.00	0.00	5,494.89	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.16
5,800.00	0.00	0.00	5,594.89	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.16
5,900.00	0.00	0.00	5,694.89	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.16
6,000.00	0.00	0.00 0.00	5,794.89 5,894.89	51.02 51.02	-1,278.82 -1,278.82	14,533,358.90 14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.10 109° 29' 50.10
6,100.00 6,200.00	0.00	0.00	5,094.09	51.02	-1,276.62 -1,278.82	14,533,358.90	2,061,214.21 2,061,214.21	40° 0' 37.235 N 40° 0' 37.235 N	109 29 50.10 109° 29' 50.10
6,300.00	0.00	0.00	6,094.89	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.16
6,400.00	0.00	0.00	6,194.89	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.16
6,500.00	0.00	0.00	6,294.89	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.16
6,600.00	0.00	0.00	6,394.89	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.10
6,700.00	0.00	0.00	6,494.89	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.16
6,800.00	0.00	0.00	6,594.89	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.16
6,900.00	0.00	0.00	6,694.89	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.16
7,000.00	0.00	0.00	6,794.89	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.16
7,100.00	0.00	0.00	6,894.89	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.16
7,200.00	0.00	0.00	6,994.89	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.16
7,300.00	0.00	0.00	7,094.89	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.16
7,400.00	0.00	0.00	7,194.89	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.16
7,500.00	0.00	0.00	7,294.89	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.16
7,600.00	0.00	0.00	7,394.89	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.16
7,700.00	0.00	0.00	7,494.89	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.16
7,800.00	0.00	0.00	7,594.89	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.16
7,900.00	0.00	0.00	7,694.89	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.16
8,000.00	0.00	0.00	7,794.89	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.16
8,100.00	0.00	0.00	7,894.89	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.16
8,200.00	0.00	0.00	7,994.89	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.16
8,300.00	0.00	0.00	8,094.89	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.16
8,400.00	0.00	0.00	8,194.89	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.16
8,500.00	0.00	0.00	8,294.89	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.16
8,531.11	0.00	0.00	8,326.00	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.16
MESAVE									
8,600.00	0.00	0.00	8,394.89	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.16
8,700.00	0.00	0.00	8,494.89	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.16
8,800.00	0.00	0.00	8,594.89	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.16
8,900.00	0.00	0.00	8,694.89	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.16





Database: EDM5000-RobertS-Local

Company: Kerr McGee Oil and Gas Onshore LP

Project: Uintah County, UT UTM12

 Site:
 NBU 921-25H Pad

 Well:
 NBU 921-25G2AS

Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference:

TVD Reference:

MD Reference:
North Reference:

**Survey Calculation Method:** 

Well NBU 921-25G2AS GL 4914' & RKB 14'

@ 4928.00ft (ASSUMED) GL 4914' & RKB 14' @ 4928.00ft (ASSUMED)

True

lanned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
9,000.00	0.00	0.00	8,794.89	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.165 W
9,100.00	0.00	0.00	8,894.89	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.165 W
9,200.00	0.00	0.00	8,994.89	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.165 W
9,300.00	0.00	0.00	9,094.89	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.165 W
9,400.00	0.00	0.00	9,194.89	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.165 W
9,500.00	0.00	0.00	9,294.89	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.165 W
9,600.00	0.00	0.00	9,394.89	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.165 W
9,700.00	0.00	0.00	9,494.89	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.165 W
9,800.00	0.00	0.00	9,594.89	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.165 W
9,845.11	0.00	0.00	9,640.00	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.165 W
TD at 984	45.11 - NBU 9	21-25G2AS F	BHL						

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
NBU 921-25G2AS PBH - plan hits target cer - Circle (radius 25.0	nter	0.00	9,640.00	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.165 W

Casing Points						
	Measured	Vertical		Casing	Hole	
	Depth	Depth		Diameter	Diameter	
	(ft)	(ft)	Name	(in)	(in)	
	2,460.15	2,370.00 8 5/8"		8.625	11.000	

Formations							
	Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
	1,499.20 4,931.09 8,531.11	4,726.00	GREEN RIVER WASATCH MESAVERDE				

Plan Annotations				
Measured	Vertical	Local Coor	dinates	
Depth	Depth	+N/-S	+E/-W	
(ft)	(ft)	(ft)	(ft)	Comment
300.00	300.00	0.00	0.00	Start Build 2.00
1,300.00	1,279.82	6.89	-172.63	Start 2731.70 hold at 1300.00 MD
4,031.70	3,846.78	44.14	-1,106.19	Start Drop -2.00
5,031.70	4,826.59	51.02	-1,278.82	Start 4813.41 hold at 5031.70 MD
9,845.11	9,640.00	51.02	-1,278.82	TD at 9845.11



Company:

## **SDI**Planning Report



Database: EDM5000-RobertS-Local

Kerr McGee Oil and Gas Onshore LP

Project: Uii

Uintah County, UT UTM12

 Site:
 NBU 921-25H Pad

 Well:
 NBU 921-25G2AS

Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference:

TVD Reference:

MD Reference:

North Reference: Survey Calculation Method: Well NBU 921-25G2AS GL 4914' & RKB 14'

@ 4928.00ft (ASSUMED) GL 4914' & RKB 14'

@ 4928.00ft (ASSUMED) True

lanned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,900.00	0.00	0.00	8,694.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
9,000.00	0.00	0.00	8,794.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
9,100.00	0.00	0.00	8,894.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
9,200.00	0.00	0.00	8,994.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
9,300.00	0.00	0.00	9,094.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
9,400.00	0.00	0.00	9,194.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
9,500.00	0.00	0.00	9,294.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
9,600.00	0.00	0.00	9,394.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
9,700.00	0.00	0.00	9,494.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
9,800.00	0.00	0.00	9,594.89	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
9,845.11	0.00	0.00	9,640.00	51.02	-1,278.82	1,279.83	0.00	0.00	0.00
TD at 9845.1	1 - NBU 921-250	S2AS PBHL							

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
NBU 921-25G2AS PBH - plan hits target cent - Circle (radius 25.00		0.00	9,640.00	51.02	-1,278.82	14,533,358.90	2,061,214.21	40° 0' 37.235 N	109° 29' 50.165 W

Casing Points						
	Measured	Vertical		Casing	Hole	
	Depth	Depth		Diameter	Diameter	
	(ft)	(ft)	Name	(in)	(in)	
	2,460.15	2,370.00 8 5/8"		8.625	11.000	

Formations							
	Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
	1,499.20 4,931.09 8,531.11	4,726.00	GREEN RIVER WASATCH MESAVERDE				

Plan Annotations				
Measured	Vertical	Local Coor	dinates	
Depth	Depth	+N/-S	+E/-W	
(ft)	(ft)	(ft)	(ft)	Comment
300.00	300.00	0.00	0.00	Start Build 2.00
1,300.00	1,279.82	6.89	-172.63	Start 2731.70 hold at 1300.00 MD
4,031.70	3,846.78	44.14	-1,106.19	Start Drop -2.00
5,031.70	4,826.59	51.02	-1,278.82	Start 4813.41 hold at 5031.70 MD
9,845.11	9,640.00	51.02	-1,278.82	TD at 9845.11

#### **NBU 921-25A3DS**

Surface: 1,498' FNL 736' FEL (SE/4NE/4) BHL: 1,110' FNL 776' FEL (NE/4NE/4)

#### **NBU 921-25G1CS**

Surface: 1,489' FNL 754' FEL (SE/4NE/4) BHL: 1,895' FNL 1,893' FEL (SW/4NE/4)

#### **NBU 921-25G2AS**

Surface: 1,484' FNL 763' FEL (SE/4NE/4) BHL: 1,439' FNL 2,042' FEL (SW/4NE/4)

#### **NBU 921-25H2AS**

Surface: 1,493' FNL 745' FEL (SE/4NE/4) BHL: 1,538' FNL 857' FEL (SE/4NE/4)

#### **NBU 921-25H2DS**

Surface: 1,502' FNL 727' FEL (SE/4NE/4) BHL: 1,958' FNL 913' FEL (SE/4NE/4)

> Pad: NBU 921-25H Section 25 T9S R21E Mineral Lease: UO 1189 ST

Uintah County, Utah Operator: Kerr-McGee Oil & Gas Onshore LP

#### MULTI-POINT SURFACE USE PLAN of OPERATIONS (SUPO)

This SUPO contains surface operating procedures for Kerr-McGee Oil & Gas Onshore LP (KMG), a wholly owned subsidiary of Anadarko Petroleum Corporation (APC) pertaining to actions that involve the State of Utah School and Institutional Trust Lands Administration (SITLA) in the development of minerals leased to APC/KMG (including, but not limited to, APDs/SULAs/ROEs/ROWs and/or easements).

See associated Utah Division of Oil, Gas, and Mining (UDOGM) Form 3(s), plats, maps, and other attachments for site-specific information on projects represented herein.

In accordance with Utah Oil & Gas Conservation Rule R649-3-11 pertaining to Directional Drilling, these wells will be directionally drilled. Refer to Topo Map A for directions to the location and Topo Maps A and B for location of access roads within a 2-mile radius.

#### A. Existing Roads:

Existing roads consist of county roads and improved/unimproved lease roads. APC/KMG will maintain existing roads in a condition that is the same as or better than before operations began and in a safe and usable condition. Maintenance of existing roads will continue until final abandonment and reclamation of well pads and/or other facilities. The road maintenance may include, but is not limited to, blading, ditching, culvert installation/cleanout, surfacing, and dust control.

Typically, roads, gathering lines and electrical distribution lines will occupy common disturbance corridors and roadways will be used as working space. All disturbances located in the same corridor will overlap each other to the maximum extent possible; in no case will the maximum disturbance width of the access road and utility corridors exceed 50', unless otherwise approved.

#### **B.** Planned Access Roads:

No new access road to this pad location is proposed (see Topo Map B). Applicable Uintah County encroachment and/or pipeline crossing permits will be obtained prior to construction/development. No other pipelines will be crossed at this location.

Where roads are new or to be reconstructed, they will be located, designed, and maintained to meet the standards of SITLA and other commonly accepted Best Management Practices (BMPs). If a new road/corridor were to cross a water of the United States, KMG will adhere to the requirements of applicable Nationwide or Individual Permits of the Department of Army Corps of Engineers.

Turnouts; major cut and fills; culverts; bridges; gates; cattle guards; low water crossings; or modifications needed to existing infrastructure/facilities were determined at the on-site and, as applicable, are typically shown on attached Exhibits and Topo maps.

#### C. Location of Existing and Proposed Facilities:

This pad will expand the existing pad for the CIGE 142, which is a vertical producing well according to Utah Division of Oil, Gas and Mining (UDOGM) records as of August 12, 2010.

Production facilities (see Well Pad Design Summary and Facilities Diagram):

Production facilities will be installed on the disturbed portion of each well pad and may include bermed components (typically excluding dehy's and/or separators) that contain fluids (i.e. production tanks, produced liquids tanks). The berms will be constructed of compacted subsoil or corrugated metal, impervious, designed to hold 110% of the capacity of the largest tank, and be independent of the back cut. All permanent (on-site six months or longer) aboveground structures constructed or installed, including pumping units, will be painted a flat, non-reflective, earth-tone color chosen at the onsite in coordination with SITLA.

Production tanks will be constructed, maintained, and operated to prevent unauthorized surface or subsurface discharges of liquids and to prevent livestock or wildlife entry. The tanks are not to be used for disposal of liquids from additional sources without prior approval of UDOGM. Gathering facilities:

The following pipeline transmission facilities will apply if the well is productive (see Topo D):

The total gas gathering (steel line pipe with fusion bond epoxy coating) pipeline distances from the meter to the tie in point is  $\pm 710^{\circ}$  and the individual segments are broken up as follows:

±400' (0.1 miles) –New 6" buried gas pipeline from the meter to the edge of the pad.

#### NBU 921-25A3DS / 25G1CS/ 25G2AS/ 25H2AS/ 25H2DS

- $\pm 90$ ' (0.02 miles) –New 6" buried gas pipeline from the edge of pad to the NBU 921-25A pad intersection.
- $\pm 220$ ' (0.04 miles) –New 8" buried gas pipeline from the NBU 921-25A pad intersection to the existing 10" gas pipeline tie in point. .

The total liquid gathering pipeline distance from the meter to the tie in point is  $\pm 2,410$ ' and the individual segments are broken up as follows:

±400' (0.1 miles) –New 4" buried liquid pipeline from the meter to the edge of the pad. ±90' (0.02 miles) –New 4" buried liquid pipeline from the edge of pad to the access road. ±1,920' (0.4 miles) –New 6" buried liquid pipeline from the edge of pad to the existing buried liquid pipeline tie in point.

The liquid gathering lines will be made of polyethylene or a composite polyethylene/steel or polyethylene/fiberglass that is not subject to internal or external pipe corrosion. The content of the produced fluids to be transferred by the liquid gathering system will be approximately 92% produced water and 8% condensate. Trunk line valve connections for the water gathering system will be below ground but accessible from the surface in order to prevent freezing during winter time.

The proposed pipelines will be buried and will include gas gathering and liquid gathering pipelines in the same trench. Where the pipeline is adjacent to the road or well pad, the road and/or well pad will be utilized for construction activities and staging. Kerr-McGee requests a permanent 30' right-of-way adjacent to the road for life-of-project for maintenance, repairs, and/or upgrades, no additional right-of-way will be needed beyond the 30'. Where the pipeline is not adjacent to the road or well pad, Kerr-McGee requests a temporary 45' construction right-of-way and 30' permanent right-of-way.

The proposed trench width for the pipeline would range from 18-48 inches and will be excavated to a depth of 48 to 60 inches of normal soil cover or 24 inches of cover in consolidated rock. During construction blasting may occur along the proposed right-of-way where trenching equipment cannot cut into the bedrock. Large debris and rocks removed from the earth during trenching and blasting that could not be returned to the trench would be distributed evenly and naturally in the project area. The proposed pipelines will be pressure tested pneumatically (depending on size) or with fluids (either fresh or produced). If fluids are used, there will be no discharge to the surface.

Pipeline signs will be installed along the right-of-way to indicate the pipeline proximity, ownership, and to provide emergency contact phone numbers. Above ground valves, T's, and/or cathodic protection will be installed at various locations for connection, corrosion prevention and/or for safety purposes.

#### D. Location and Type of Water Supply:

Water for drilling purposes will be obtained from one of the following sources:

- Dalbo Inc.'s underground well located in Ouray, Utah, Sec. 32 T4S R3E, Water User Claim number 43-8496, application number 53617.
- Price Water Pumping Inc. Green River and White River, various sources, Water Right Number 49-1659, application number: a35745.

Water will be hauled to location over the roads marked on Maps A and B.

No water well is to be drilled on this lease.

#### **E.** Source of Construction Materials:

Construction operations will typically be completed with native materials found on location. If needed, construction materials that must be imported to the site (mineral material aggregate, soils or materials suitable for fill/surfacing) will be obtained from a nearby permitted source and described in subsequent Sundry requests. No construction materials will be removed from State lands without prior approval from SITLA.

#### F. <u>Methods of Handling Waste Materials</u>:

Should the well be productive, produced water will be contained in a water tank and will be transported by pipeline and/or truck to an approved disposal sites facilities and/or Salt Water Disposal (SWD) injection well. Currently, those facilities are:

RNI in Sec. 5 T9S R22E

Ace Oilfield in Sec. 2 T6S R20E MC&MC in Sec. 12 T6S R19E

Pipeline Facility in Sec. 36 T9S R20E

Goat Pasture Evaporation Pond in SW/4 Sec. 16 T10S R22E

Bonanza Evaporation Pond in Sec. 2 T10S R23E

Ouray #1 SWD in Sec. 1 T9S R21E NBU 159 SWD in Sec. 35 T9S R21E CIGE 112D SWD in Sec. 19 T9S R21E CIGE 114 SWD in Sec. 34 T9S R21E NBU 921-34K SWD in Sec. 34 T9S R21E NBU 921-33F SWD in Sec. 33 T9S R21E NBU 921-34L SWD in Sec. 34 T9S R21E

Drill cuttings and/or fluids will be contained in the reserve/frac pit. Cuttings will be buried in pit(s) upon closure. Unless otherwise approved, no oil or other oil-based drilling additives, chromium/metals-based, or saline muds will be used during drilling. Only fresh water (as specified above), biodegradable polymer soap, bentonite clay, and/or non-toxic additives will be used in the mud system.

Pits will be constructed to minimize the accumulation of surface runoff. Should fluid hydrocarbons be encountered during drilling, completions or well testing, product will either be contained in test tanks on the well site or evacuated by vacuum trucks and transported to an approved disposal/sales facility. Should petroleum hydrocarbons unexpectedly be released into a pit, they will be removed as soon as practical but in no case will they remain longer than 72 hours unless an alternate is approved by SITLA. Should timely removal prove infeasible, the pit will be netted with mesh no larger than 1 inch until such time as

hydrocarbons can be removed. Hydrocarbon removal will also take place prior to the closure of the pit, unless authorization is provided for disposal via alternative pit closure methods (e.g. solidification).

The reserve and/or fracture stimulation pit will be lined with a synthetic material 20-mil or thicker, The liner will be installed over smooth fill subgrade that is free of pockets, loose rocks, or other materials (i.e. sand, sifted dirt, bentonite, straw, etc.) that could damage the liner. Any additional pits necessary to subsequent operations, such as temporary flare or workover pits, will be contained within the originally approved well pad and disturbance boundaries. Such temporary pits will be backfilled and reclaimed within 180 days of completion of work at a well location.

For the protection of livestock and wildlife, all open pits and cellars will be fenced/covered to prevent wildlife or livestock entry. Total height of pit fencing will be at least 42 inches and corner posts will be cemented and/or braced in such a manner as to keep the fence tight at all times. Standard steel, wood, or pipe posts shall be used between the corner braces. Maximum distance between any 2 fence posts shall be no greater than 16 feet.

Pits containing drilling cuttings, mud, and/or completions fluids will be allowed to dry. Any free fluids remaining after six (6) months from reaching total depth, date of completion, and/or determination of inactivity will be removed (as weather conditions allow) to an approved site and the pit reclaimed. Additional drying methods may include fly-ash solidification or sprinkler evaporation. Installation and operation of any sprinklers, pumps, and equipment will ensure that water spray or mist does not drift. Reserve pit liners will be cut off or folded as near to the mud surface as possible and as safety considerations allow and buried on location.

No garbage or non-exempt substances as defined by Resource Conservation and Recovery Act (RCRA) subtitle C will be placed in the reserve pit. All refuse generated during construction, drilling, completion, and well testing activities will be contained in an enclosed receptacle, removed from the drill locations promptly, and transported to an approved disposal facility.

Portable, self-contained chemical toilets and/or sewage processing facilities will be provided for human waste disposal. Upon completion of operations, or as required, the toilet holding tanks will be pumped and the contents disposed of in an approved sewage disposal facility. All applicable regulations pertaining to disposal of human and solid waste will be observed.

Any undesirable event, accidental release, or in excess of reportable quantities will be managed according to the notification requirements of UDOGMs "Reporting Oil and Gas Undesirable Events" rule, and, where State wells are participatory to a Federal agreement, according to NTL-3A.

#### **Materials Management**

Hazardous materials above reportable quantities will not be produced by drilling or completing proposed wells or constructing the pipelines/facilities. The term "hazardous materials" as used here means: (1) any substance, pollutant, or containment listed as hazardous under the Comprehensive Environmental Response,

Compensation, and Liability Act (CERCLA) of 1980, as amended 42 U.S.C. 9601 et seq., and the regulations issued under CERCLA; and (2) any hazardous waste as defined in RCRA of 1976, as amended. In addition, no extremely hazardous substance, as defined in 40 CFR 355, in threshold planning quantities, would be used, produced, stored, transported, or disposed of while producing any well.

Chemicals subject to reporting under Title III of the Superfund Amendments and Reauthorization Act (SARA) in quantities of 10,000 pounds or more may be produced and/or stored at production facilities and may be kept in limited quantities on drilling sites and well locations for short periods of time during drilling or completion activities.

#### **G.** Ancillary Facilities:

None are anticipated.

#### H. Well Site Layout (see Well Pad Design Summary):

The location, orientation and aerial extent of each drill pad; reserve/completion/flare pit; access road ingress/egress points, drilling rig, dikes/ditches, existing wells/infrastructure; proposed cuts and fills; and topsoil and spoil material stockpile locations are depicted on the exhibits for each project, where applicable. Site-specific conditions may require slight deviation in actual equipment and facility layout; however, the area of disturbance, as described in the survey, will not be exceeded.

Coordinates are provided in the National Spatial Reference System, North American Datum, 1983 (NAD83) or latest edition. Distances are depicted on each plat to the nearest two adjacent section lines.

#### I. Plans for Reclamation of the Surface:

Surface reclamation will be undertaken in two phases: interim and final. Interim reclamation is conducted following well completion and extends through the period of production. This reclamation is for the area of the well pad that is not required for production activities. Final reclamation is conducted following well plugging/conversion and/or facility abandonment processes.

Reclamation activities in both phases may include but are not limited to: re-contouring or re-configuration of topographic surfaces, restoration of drainage systems, segregation of spoils materials, minimizing surface disturbance, re-evaluating backfill requirements, pit closure, topsoil redistribution, soil treatments, seeding and weed control.

#### **Interim Reclamation**

Interim reclamation includes pit closure, re-contouring (where possible), soil bed preparation, topsoil placement, seeding, and/or weed control.

Interim re-contouring involves bringing all construction material from cuts and fills back onto the well pad and site and reestablishing the natural contours where desirable and practical. Fill and stockpiled spoils no

longer necessary to the operation will be spread on the cut slopes and covered with stockpiled topsoil. All stockpiled top soils will be used for interim reclamation where practical to maintain soil viability. Where possible, the land surface will be left "rough" after re-contouring to ensure that the maximum surface area will be available to support the reestablishment of vegetative cover.

A reserve pit, upon being allowed to dry, will be backfilled and compacted with cover materials that are void of any topsoil, vegetation, large stones, rocks or foreign objects. Soils that are moisture laden, saturated, or partially/completely frozen will not be used for backfill or cover. The pit area will be mounded to allow for settling and to promote positive surface drainage away from the pit.

#### **Final Reclamation**

Final reclamation will be performed for newly drilled unproductive wells and/or at the end of the life of a productive well. As soon as practical after the conclusion of drilling and testing operations, unproductive drill holes will be plugged and abandoned (P&A). Site and road reclamation will commence following plugging. In no case will reclamation at non-producing locations be initiated later than six (6) months from the date a well is plugged. A joint inspection of the disturbed area to be reclaimed may be requested by APC/KMG. The primary purpose of this inspection will be to review the existing conditions, or agree upon a revised final reclamation and abandonment plan. A Notice of Intent to Abandon will be filed for final recommendations regarding surface reclamation.

After plugging, all wellhead equipment that is no longer needed will be removed, and the well site will be reclaimed. Final contouring will blend with and follow as closely as practical the natural terrain and contours of the original site and surrounding areas. After re-contouring, final grading will be conducted over the entire surface of the well site and access road. Where practical, the area will be ripped to a depth of 18 to 24 inches on 18 to 24-inch centers and surface materials will be pitted with small depressions to form longitudinal depressions 12 to 18 inches deep perpendicular to the natural flow of water.

All unnecessary surface equipment and structures (e.g. cattle guards) and water control structures (e.g. culverts, drainage pipes) not needed to facilitate successful reclamation will be removed during final reclamation. Roads that will be reclaimed will be ripped to a depth of 18 inches where practical, re-contoured to approximate the original contour of the ground and seeded.

Upon successfully completing reclamation of a P&A location, a Final Abandonment Notice will be submitted to UDOGM.

#### **Seeding and Measures Common to Interim and Final Reclamation**

Reclaimed areas may be fenced to exclude grazing and encourage re-vegetation.

On slopes where severe erosion can become a problem and the use of machinery is not practical, seed will be hand broadcast and raked with twice the specified amount of seed. The slope will be stabilized using materials specifically designed to prevent erosion on steep slopes and hold seed in place so vegetation can become

permanently established. These materials will include, but are not limited to, erosion control blankets and bonded fiber matrix at a rate to achieve a minimum of 80 percent soil coverage.

Seeding will occur year-round as conditions allow. Seed mixes appropriate to the native plant community as determined and specified for each project location based on the site specific soils will be used for revegetation. The site specific seed mix will be provided by SITLA.

#### J. <u>Surface/Mineral Ownership</u>:

SITLA 675 East 500 South, Suite 500 Salt Lake City, UT 84102

#### **K.** Other Information:

A Class I literature survey has been conducted by Montgomery Archaeological Consultants, Inc. (MOAC). For additional details please refer to report MOAC 10-125.

A paleontological reconnaissance has been completed by Intermountain Paleo-Consulting (IPC) and a report will be provided under separate cover.

A biological field survey was completed by Grasslands Consulting, Inc. on July 13, 2010. For additional details please refer to report GCI-290.

# 'APIWellNo:43047512500000'

#### M. Lessee's or Operators' Representative & Certification:

Danielle Piernot Regulatory Analyst I Kerr-McGee Oil & Gas Onshore LP PO Box 173779 Denver, CO 80217-3779 (720) 929-6156 Tommy Thompson General Manager, Drilling Kerr-McGee Oil & Gas Onshore LP PO Box 173779 Denver, CO 80217-3779 (720) 929-6724

Certification: All lease and/or unit operations will be conducted in such a manner that full compliance is made with all applicable laws, regulations, Onshore Oil and Gas Orders, the approved Plan of Operations, and any applicable Notice to Lessees.

The Operator will be fully responsible for the actions of its subcontractors. A complete copy of the approved "Application for Permit to Drill" will be furnished to the field representative(s) to ensure compliance and shall be on location during all construction and drilling operations.

Kerr-McGee Oil & Gas Onshore LP is considered to be the operator of the subject well. Kerr-McGee Oil & Gas Onshore LP agrees to be responsible under terms and conditions of the lease for the operations conducted upon leased lands.

Bond coverage for State lease activities is provided by State Surety Bond 22013542, and for applicable Federal lease activities and pursuant to 43 CFR 3104, by Bureau of Land Management Nationwide Bond WYB000291.

I hereby certify that I, or persons under my supervision, have inspected the proposed drill site and access route, that I am familiar with the conditions that currently exist; that I have full knowledge of the State and Federal laws applicable to this operation; that the statements made in this plan are, to the best of my knowledge, true and correct; and the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

Danielle Piernot

August 13, 2010

Date

CLASS I REVIEW OF KERR-MCGEE OIL AND GAS ONSHORE LP'S 36 PROPOSED WELL LOCATIONS IN T9S, R21E, SECTION 25 (MOAC Report No. 10-125) UINTAH COUNTY, UTAH

By:

Nicole Shelnut

Prepared For:

State of Utah
School and Institutional Trust Lands Administration

Prepared Under Contract With:

Kerr-McGee Oil and Gas Onshore LP 1368 South 1200 East Vernal, Utah 84078

Prepared By:

Montgomery Archaeological Consultants, Inc. P.O. Box 219 Moab, Utah 84532

MOAC Report No. 10-125

July 26, 2010

State of Utah Public Lands Policy Coordination Office Permit No. 117

United States Department of Interior (FLPMA)
Permit No. 10-UT-60122



# **Grasslands Consulting, Inc.**

4800 Happy Canyon Road, Suite 110, Denver, CO 80237 (303) 759-5377 Office (303) 759-5324 Fax

#### SPECIAL STATUS PLANT AND WILDLIFE SPECIES REPORT

**Report Number:** GCI #290

**Report Date:** August 3, 2010

**Operator:** Kerr-McGee Oil & Gas Onshore LP

Well: NBU 921-25H well pad (Bores: NBU 921-25A3DS, NBU 921-25G1CS, NBU 921-

25G2AS, NBU 921-25H2AS & NBU 921-25H2DS)

**Pipeline:** Associated pipeline ad pipeline re-route

Location: Section 25, Township 9 South, Range 21 East; Uintah County, Utah

**Survey-Species:** Uinta Basin Hookless Cactus (*Sclerocactus wetlandicus*)

Survey Date: July 13, 2010

**Observers:** Grasslands Consulting, Inc. Biologists: Brad Snopek, Jennie Sinclair, Jonathan

Sexauer, Adrienne Cunningham, Garrett Peterson and field technicians.





Kerr-McGee Oil & Gas Onshore LP PO Box 173779 DENVER, CO 80217-3779

July 15, 2010

Ms. Diana Mason Division of Oil, Gas and Mining P.O. Box 145801 Salt Lake City, UT 84114-6100

Re: Directional Drilling R649-3-11

NBU 921-25G2AS

T9S-R21E

Section 25: SENE surface, SWNE bottom hole

Surface: 1484' FNL, 763' FEL Bottom Hole: 1439' FNL, 2042' FEL

Uintah County, Utah

Dear Ms. Mason:

Pursuant to the filing of Kerr-McGee Oil & Gas Onshore LP's (Kerr-McGee) Application for Permit to Drill regarding the above referenced well, we are hereby submitting this letter in accordance with Oil & Gas Conservation Rule R649-3-11 pertaining to Directional Drilling.

- Kerr-McGee's NBU 921-25G2AS is located within the Natural Buttes Unit area.
- Kerr-McGee is permitting this well as a directional well in order to minimize surface disturbance. Locating the well at the surface location and directionally drilling from this location, Kerr-McGee will be able to utilize the existing road and pipelines in the area.
- Furthermore, Kerr-McGee certifies that it is the sole working interest owner within 460 feet of the entire directional well bore.

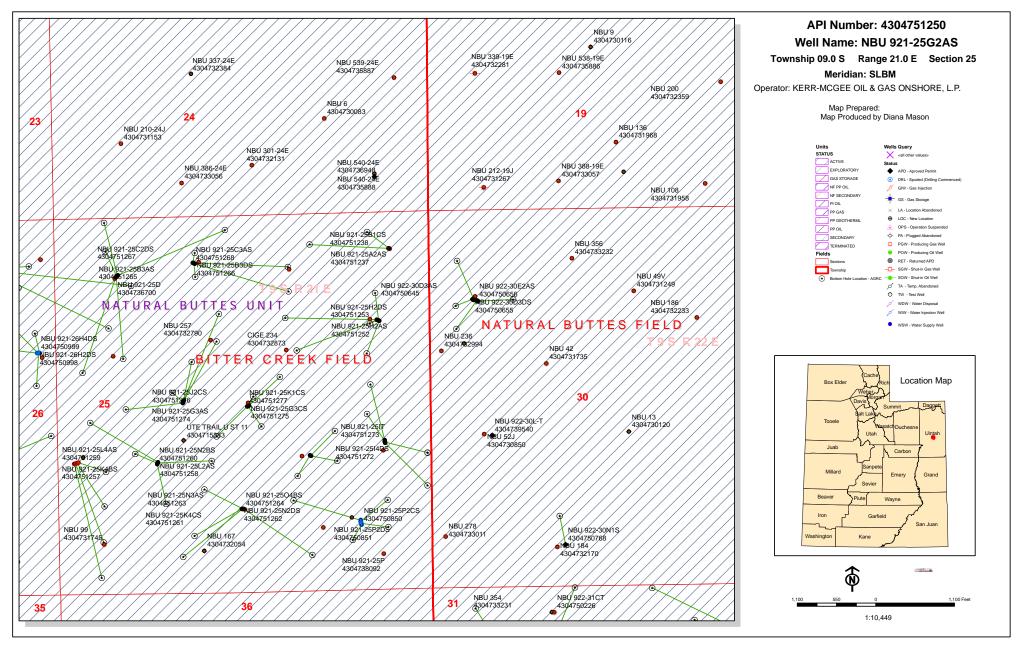
Therefore, based on the above stated information, Kerr-McGee Oil & Gas Onshore LP requests the permit be granted pursuant to R649-3-11.

Sincerely,

KERR-MCGEE OIL & GAS ONSHORE LP

Joe Matney

Sr. Staff Landman



# **United States Department of the Interior**

#### BUREAU OF LAND MANAGEMENT

Utah State Office
P.O. Box 45155
Salt Lake City, Utah 84145-0155

IN REPLY REFER TO: 3160 (UT-922)

August 17, 2010

Memorandum

To: Assistant District Manager Minerals, Vernal District

From: Michael Coulthard, Petroleum Engineer

Subject: 2010 Plan of Development Natural Buttes Unit

Uintah County, Utah.

Pursuant to email between Diana Whitney, Division of Oil, Gas and Mining, and Mickey Coulthard, Utah State Office, Bureau of Land Management, the following wells are planned for calendar year 2010 within the Natural Buttes Unit, Uintah County, Utah.

API # WELL NAME LOCATION

(Proposed PZ WASATCH-MESA VERDE)

#### NBU 921-25A Pad

43-047-51237 NBU 921-25A2AS Sec 25 T09S R21E 0489 FNL 0565 FEL BHL Sec 25 T09S R21E 0252 FNL 0865 FEL

43-047-51238 NBU 921-25B1CS Sec 25 T09S R21E 0489 FNL 0575 FEL BHL Sec 25 T09S R21E 0416 FNL 1676 FEL

#### NBU 921-25D Pad

43-047-51239 NBU 921-25C1AS Sec 25 T09S R21E 0800 FNL 0893 FWL BHL Sec 25 T09S R21E 0190 FNL 2405 FWL

43-047-51240 NBU 921-25D1BS Sec 25 T09S R21E 0807 FNL 0885 FWL BHL Sec 25 T09S R21E 0060 FNL 0716 FWL

43-047-51241 NBU 921-25E1CS Sec 25 T09S R21E 0821 FNL 0871 FWL BHL Sec 25 T09S R21E 1976 FNL 0947 FWL

43-047-51242 NBU 921-25E3AS Sec 25 T09S R21E 0828 FNL 0864 FWL

43-047-51251 NBU 921-25D1CS Sec 25 T09S R21E 0814 FNL 0878 FWL

BHL Sec 25 T098 R21E 0460 FNL 0726 FWL

BHL Sec 25 T09S R21E 2162 FNL 0371 FWL

API # WELL NAME LOCATION (Proposed PZ WASATCH-MESA VERDE) NBU 921-25F Pad 43-047-51243 NBU 921-25F1BS Sec 25 T09S R21E 2580 FNL 1780 FWL BHL Sec 25 T09S R21E 1366 FNL 2296 FWL 43-047-51244 NBU 921-25F1CS Sec 25 T09S R21E 2571 FNL 1784 FWL BHL Sec 25 T09S R21E 1754 FNL 2259 FWL 43-047-51245 NBU 921-25F3AS Sec 25 T09S R21E 2589 FNL 1776 FWL BHL Sec 25 T09S R21E 2034 FNL 1905 FWL 43-047-51246 NBU 921-25F3CS Sec 25 T09S R21E 2598 FNL 1772 FWL BHL Sec 25 T09S R21E 2461 FNL 1628 FWL 43-047-51247 NBU 921-25L1BS Sec 25 T09S R21E 2607 FNL 1768 FWL BHL Sec 25 T09S R21E 2597 FSL 0969 FWL NBU 921-25H Pad 43-047-51248 NBU 921-25A3DS Sec 25 T09S R21E 1498 FNL 0736 FEL BHL Sec 25 T09S R21E 1110 FNL 0776 FEL 43-047-51249 NBU 921-25G1CS Sec 25 T09S R21E 1489 FNL 0754 FEL BHL Sec 25 T09S R21E 1895 FNL 1893 FEL 43-047-51250 NBU 921-25G2AS Sec 25 T09S R21E 1484 FNL 0763 FEL BHL Sec 25 T09S R21E 1439 FNL 2042 FEL 43-047-51252 NBU 921-25H2AS Sec 25 T09S R21E 1493 FNL 0745 FEL BHL Sec 25 T09S R21E 1538 FNL 0857 FEL 43-047-51253 NBU 921-25H2DS Sec 25 T09S R21E 1502 FNL 0727 FEL BHL Sec 25 T09S R21E 1958 FNL 0913 FEL NBU 921-25J Pad 43-047-51254 NBU 921-25J4AS Sec 25 T09S R21E 1878 FSL 1725 FEL BHL Sec 25 T09S R21E 1795 FSL 1360 FEL 43-047-51255 NBU 921-25J4CS Sec 25 T09S R21E 1886 FSL 1743 FEL BHL Sec 25 T09S R21E 1604 FSL 1920 FEL 43-047-51256 NBU 921-25J1DS Sec 25 T09S R21E 1882 FSL 1734 FEL BHL Sec 25 T09S R21E 2218 FSL 1381 FEL NBU 921-25K Pad 43-047-51257 NBU 921-25K4BS Sec 25 T09S R21E 1838 FSL 1400 FWL

43-047-51258 NBU 921-25L2AS Sec 25 T09S R21E 1848 FSL 1402 FWL

BHL Sec 25 T09S R21E 1848 FSL 2161 FWL

BHL Sec 25 T09S R21E 2423 FSL 0465 FWL

API #	WE:	LL NAME			LOCA'	TION		
(Proposed PZ	WASA	ATCH-MESA VI	ERDE)	)				
43-047-51259	NBU				R21E R21E			
43-047-51260	NBU				R21E R21E			
NBU 921-25N I	Pad							
43-047-51261	NBU				 R21E R21E		_	
43-047-51262	NBU				R21E R21E			
43-047-51263	NBU				R21E R21E			
43-047-51264	NBU				 R21E R21E		_	
NBU 921-25C I	Pad							
43-047-51265	NBU				 R21E R21E			
43-047-51266	NBU				R21E R21E			
43-047-51267	NBU				R21E R21E			
43-047-51268	NBU				R21E R21E			
NBU 921-25I I	Pad							
43-047-51269	NBU				R21E R21E			
43-047-51270	NBU				 R21E R21E		_	
43-047-51271	NBU				R21E R21E			
43-047-51272	NBU				R21E R21E			
43-047-51273	NBU				R21E R21E			

Page 4

API # WELL NAME

LOCATION

(Proposed PZ WASATCH-MESA VERDE)

#### NBU 921-25J2 Pad

43-047-51274 NBU 921-25G3AS Sec 25 T09S R21E 2611 FSL 2578 FEL BHL Sec 25 T09S R21E 2265 FNL 2136 FEL 43-047-51275 NBU 921-25G3CS Sec 25 T09S R21E 2606 FSL 2587 FEL BHL Sec 25 T09S R21E 2530 FNL 2518 FEL 43-047-51276 NBU 921-25J2CS Sec 25 T09S R21E 2601 FSL 2596 FEL BHL Sec 25 T09S R21E 2310 FSL 2410 FEL 43-047-51277 NBU 921-25K1CS Sec 25 T09S R21E 2596 FSL 2605 FEL BHL Sec 25 T09S R21E 2186 FSL 2231 FWL

This office has no objection to permitting the wells at this time.

Michael L. Coulthard

| Digitally (signed by Michael Michael Coulthard of Minneralk, principal of Minneralk, coulthard of Minn

bcc: File - Natural Buttes Unit Division of Oil Gas and Mining Central Files Agr. Sec. Chron Fluid Chron

MCoulthard:mc:8-17-10

From: Jim Davis

To: Bonner, Ed; Garrison, LaVonne; Hill, Brad; Mason, Diana

CC: Bartlett, Floyd; Laura.Gianakos@anadarko.com; Piernot, Danielle; Upch...

**Date:** 9/2/2010 9:13 AM

**Subject:** SITLA approval of Kerr McGee wells **Attachments:** KMG approvals and paleo 9.1.2010.xlsx

The following wells have been approved by SITLA including arch clearance. Paleo clearance is also granted with stipulations as noted.

Full Paleo monitoring: All ground-disturbing activities must be monitored by a permitted paleontologist.

```
NBU 922-29F4DS [API #4304751207] Full Monitoring IPC 10-08
 NBU 922-29G4CS [API #4304751208] Full Monitoring
                                                  IPC 10-08
 NBU 922-29J4BS [API #4304751209] Full Monitoring
                                                  IPC 10-08
 NBU 922-29K1DS [API #4304751210] Full Monitoring
                                                  IPC 10-08
 NBU 922-29G1AS [API #4304751194] Full Monitoring
                                                  IPC 10-06
 NBU 922-29G1DS [API #4304751195] Full Monitoring
                                                  IPC 10-06
 NBU 922-29G2BS [API #4304751196] Full Monitoring
                                                  IPC 10-06
 NBU 922-29G3BS [API #4304751197] Full Monitoring
                                                  IPC 10-06
NBU 921-25A3DS [API 4304751248]
                                   Full Monitoring
                                                  IPC 10-21
NBU 921-25G1CS [API 4304751249]
                                                  IPC 10-21
                                   Full Monitoring
NBU 921-25G2AS [API 4304751250]
                                   Full Monitoring
                                                  IPC 10-21
NBU 921-25H2AS [API 4304751252]
                                   Full Monitoring IPC 10-21
NBU 921-25H2DS [API 4304751253]
                                   Full Monitoring IPC 10-21
NBU 921-25G3AS [API 4304751274]
                                   Full Monitoring IPC 10-23
NBU 921-25G3CS [API 4304751275]
                                   Full Monitoring
                                                  IPC 10-23
NBU 921-25J2CS [API 4304751276]
                                                  IPC 10-23
                                    Full Monitoring
NBU 921-25K1CS [API 4304751277]
                                   Full Monitoring IPC 10-23
NBU 921-25A2AS [API 4304751237]
                                   Full Monitoring IPC 10-21
NBU 921-25B1CS [API 4304751238]
                                    Full Monitoring IPC 10-21
```

Spot Paleo Monitoring: All ground-disturbing activities must be monitored by a permitted paleontologist at the beginning of construction and thereafter spot-monitored as paleontological conditions merit.

```
NBU 921-25C1AS [API 4304751239]
                                    Spot Monitoring IPC 10-20
NBU 921-25D1BS [API 4304751240]
                                    Spot Monitoring IPC 10-20
NBU 921-25D1CS [API 4304751251]
                                   Spot Monitoring IPC 10-20
NBU 921-25E1CS [API 4304751241]
                                    Spot Monitoring IPC 10-20
NBU 921-25E3AS [API 4304751242]
                                    Spot Monitoring IPC 10-20
NBU 921-25F1BS [API 4304751243]
                                    Spot Monitoring IPC 10-21
NBU 921-25F1CS [API 4304751244]
                                    Spot Monitoring IPC 10-21
NBU 921-25F3AS [API 4304751245]
                                    Spot Monitoring IPC 10-21
NBU 921-25F3CS [API 4304751246]
                                    Spot Monitoring IPC 10-21
NBU 921-25L1BS [API 4304751247]
                                    Spot Monitoring IPC 10-21
NBU 921-25J1DS [API 4304751256]
                                    Spot Monitoring IPC 10-23
NBU 921-25J4AS [API 4304751254]
                                    Spot Monitoring IPC 10-23
NBU 921-25J4CS [API 4304751255]
                                    Spot Monitoring IPC 10-23
                                    Spot Monitoring IPC 10-22
NBU 921-25K4BS [API 4304751257]
NBU 921-25L2AS [API 4304751258]
                                    Spot Monitoring IPC 10-22
NBU 921-25L4AS [API 4304751259]
                                    Spot Monitoring IPC 10-22
NBU 921-25N2BS [API 4304751260]
                                    Spot Monitoring IPC 10-22
NBU 921-25K4CS [API 4304751261]
                                    Spot Monitoring IPC 10-23
NBU 921-25N2DS [API 4304751262]
                                    Spot Monitoring IPC 10-23
NBU 921-25N3AS [API 4304751263]
                                    Spot Monitoring IPC 10-23
```

```
NBU 921-25O4BS [API 4304751264]
                                    Spot Monitoring IPC 10-23
NBU 921-25B3AS [API 4304751265]
                                    Spot Monitoring IPC 10-20
NBU 921-25B3DS [API 4304751266]
                                    Spot Monitoring IPC 10-20
                                    Spot Monitoring IPC 10-20
NBU 921-25C2DS [API 4304751267]
NBU 921-25C3AS [API 4304751268]
                                    Spot Monitoring IPC 10-20
NBU 921-25IT [API 4304751273]
                                    Spot Monitoring IPC 10-23
NBU 921-25H3DS [API 4304751269]
                                    Spot Monitoring IPC 10-23
                                    Spot Monitoring IPC 10-23
NBU 921-2512AS [API 4304751270]
                                    Spot Monitoring IPC 10-23
NBU 921-25I4AS [API 4304751271]
NBU 921-25I4DS [API 4304751272]
                                    Spot Monitoring IPC 10-23
NBU 922-29A1BS [API #4304751183]
                                    Spot Monitoring IPC 10-06
 NBU 922-29A1CS [API #4304751184] Spot Monitoring IPC 10-06
 NBU 922-29A4CS [API #4304751185] Spot Monitoring IPC 10-06
 NBU 922-29H1BS [API #4304751186] Spot Monitoring IPC 10-06
 NBU 922-29B2CS [API #4304751187] Spot Monitoring IPC 10-06
 NBU 922-29B4AS [API #4304751188] Spot Monitoring IPC 10-06
                                                             (SITLA surf/ Fed Min)
 NBU 922-29C2AS [API #4304751189] Spot Monitoring IPC 10-06
                                                             (SITLA surf/ Fed Min)
 NBU 922-29C4AS [API #4304751190] Spot Monitoring IPC 10-06
 NBU 922-29B1AS [API #4304751191] Spot Monitoring IPC 10-06
 NBU 922-29B1DS [API #4304751192] Spot Monitoring IPC 10-06
 NBU 922-29B2BS [API #4304751193] Spot Monitoring IPC 10-06
 NBU 922-29D4DS [API #4304751198] Spot Monitoring IPC 10-05
 NBU 922-29E3BS [API #4304751199] Spot Monitoring IPC 10-05
 NBU 922-29F3AS [API #4304751200] Spot Monitoring IPC 10-05
 NBU 922-29F3BS [API #4304751201] Spot Monitoring IPC 10-05
 NBU 922-29G4AS [API #4304751202] Spot Monitoring IPC 10-06
 NBU 922-29H1CS [API #4304751203] Spot Monitoring IPC 10-06
 NBU 922-29H4CS [API #4304751204] Spot Monitoring IPC 10-06
 NBU 922-29I1BS [API #4304751205]
                                   Spot Monitoring IPC 10-06
 NBU 922-29I1CS [API #4304751206]
                                   Spot Monitoring IPC 10-06
 NBU 922-29K2CS [API #4304751211] Spot Monitoring IPC 10-07
 NBU 922-29K4AS [API #4304751212] Spot Monitoring IPC 10-07
 NBU 922-29L1AS [API #4304751213]
                                   Spot Monitoring IPC 10-07
 NBU 922-29L2BS [API #4304751214]
                                   Spot Monitoring IPC 10-07
 NBU 922-29L2CS [API #4304751215] Spot Monitoring IPC 10-07
 NBU 922-29L3CS [API #4304751216] Spot Monitoring IPC 10-07
 NBU 922-29M2AS [API #4304751217] Spot Monitoring IPC 10-07
 NBU 922-29N2BS [API #4304751218] Spot Monitoring IPC 10-07
 NBU 922-29N3BS [API #4304751219] Spot Monitoring IPC 10-07
 NBU 922-30I4BS [API #4304751220] Spot Monitoring IPC 10-07 (SITLA surf/ Fed Min)
 NBU 922-30I4CS [API #4304751221] Spot Monitoring IPC 10-07 (SITLA surf/Fed Min)
 NBU 922-29J4CS [API #4304751222] Spot Monitoring IPC 10-08
 NBU 922-29N1BS [API #4304751223] Spot Monitoring IPC 10-08
 NBU 922-29O1CS [API #4304751224] Spot Monitoring IPC 10-08
```

That's quite a list, so I'm attaching a quick-and-dirty spreadsheet of the same data. This may be helpful to some of you.

Thanks.

-Jim

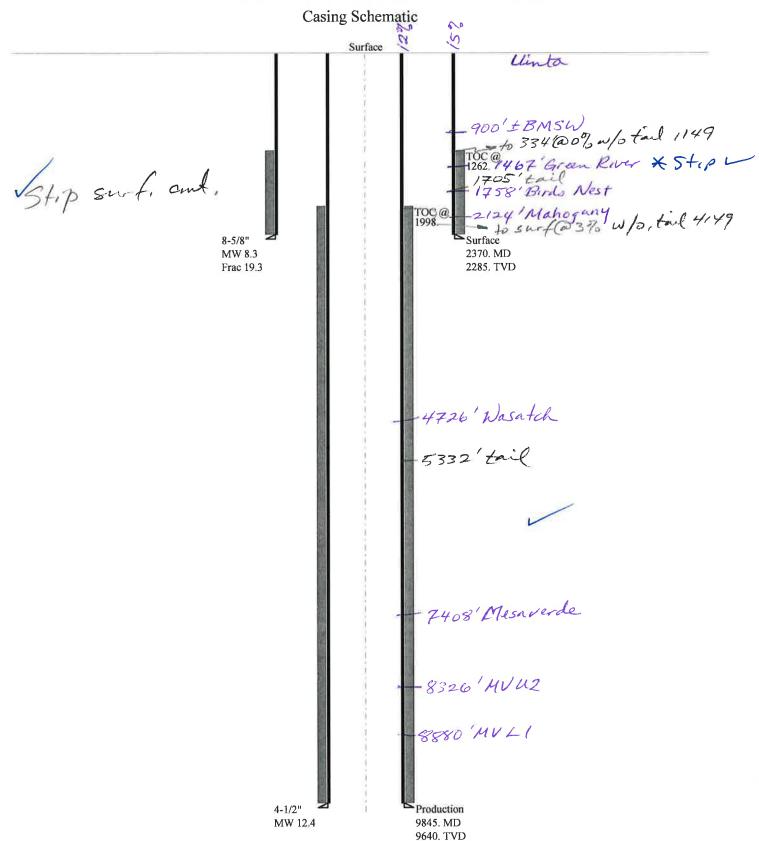
'APIWellNo:43047512500000'

Jim Davis Utah Trust Lands Administration jimdavis1@utah.gov Phone: (801) 538-5156

#### BOPE REVIEW KERR-MCGEE OIL & GAS ONSHORE, L.P. NBU 921-25G2AS 43047512500000

Well Name		KERR-MCGEE C	OIL & C	GAS ONSH	ORI	E, L.P. NBU 921	1-25G2	2AS 430475125	
String		Surf	Pro	od	ī		Ī.		
Casing Size(")		8.625	4.5	500	ī		7		
Setting Depth (TVD)		2370	964	i40			7	<u> </u>	
Previous Shoe Setting Dep	th (TVD)	40	237	170			7	<del></del>	
Max Mud Weight (ppg)		8.3	12.	1.4			7	<del></del>	
BOPE Proposed (psi)		500	500	100		<u>,                                      </u>	7	<del></del>	
Casing Internal Yield (psi)		3390	778					<del></del>	
Operators Max Anticipate	d Pressure (psi)	6073	12.				7	<del></del>	
	4 /	Į.···			_	l-	1 [].		
Calculations	Sui	rf String				8	.625	"	
Max BHP (psi)		.052*Sett	ing l	Depth*N	٨V	V= 1027			
								BOPE Adequate For Drilling And Setting Casing at D	epth?
MASP (Gas) (psi)	Ma	x BHP-(0.12	*Set	tting Dep	oth	)= 743		NO air drill	
MASP (Gas/Mud) (psi)	Ma	x BHP-(0.22	*Set	tting Dep	oth	)= <u>506</u>		NO OK	
								*Can Full Expected Pressure Be Held At Previous Sho	oe?
Pressure At Previous Shoe	Max BHP22*(Setting I	Depth - Previo	us S	Shoe Dep	pth	i)= <u>514</u>		NO Reasonable depth in area	
Required Casing/BOPE To	est Pressure=					2370		psi	
*Max Pressure Allowed @	Previous Casing Shoe=					40		psi *Assumes 1psi/ft frac gradient	
Calculations	Dro	od String					.500	· · · · · · · · · · · · · · · · · · ·	
Max BHP (psi)	110	.052*Sett	ing l	Denth*N	лv	_			-
(psi)		.032 500	1115	Бериг	V1 V	10210		BOPE Adequate For Drilling And Setting Casing at D	enth?
MASP (Gas) (psi)	Ma	ax BHP-(0.12*	*Set	tting Dei	oth	)= 5059	_	NO NO	- CPUII
MASP (Gas/Mud) (psi)		ax BHP-(0.22*			_	1.	=	YES OK	≓⊢
(Gustilla) (psi)	1710	LA BIII (0.22		tting Del		4095		*Can Full Expected Pressure Be Held At Previous Sho	oe?
Pressure At Previous Shoe	Max BHP22*(Setting I	Depth - Previo	us S	Shoe Dei	oth	)= <sub>4617</sub>		NO Reasonable	
Required Casing/BOPE To	L	1				5000	=	psi	
*Max Pressure Allowed @					_	2370		psi *Assumes 1psi/ft frac gradient	
						2370		r	
Calculations		String						"	
Max BHP (psi)		.052*Sett	ing l	Depth*N	٨V	V=			
								BOPE Adequate For Drilling And Setting Casing at D	epth?
MASP (Gas) (psi)	Ma	x BHP-(0.12	*Set	tting Dep	oth	)=		NO	
MASP (Gas/Mud) (psi)	Ma	x BHP-(0.22*	*Set	tting Dep	oth	i)=		NO	<u> </u>
								*Can Full Expected Pressure Be Held At Previous Sho	oe?
Pressure At Previous Shoe		Depth - Previo	us S	Shoe Dep	pth	1)=		NO	
Required Casing/BOPE To	est Pressure=							psi	
*Max Pressure Allowed @	Previous Casing Shoe=							psi *Assumes 1psi/ft frac gradient	
Calculations		String	_		_			lu l	
Max BHP (psi)		.052*Setti	ing l	Denth*N	лv	V=	_		
(F**)				p		<u> </u>		BOPE Adequate For Drilling And Setting Casing at D	Depth?
MASP (Gas) (psi)	Ma	x BHP-(0.12*	*Set	tting De	oth	)=	_	NO	Ť
MASP (Gas/Mud) (psi)		x BHP-(0.22*			_	1	=	NO I	╤┤
, , , , ,						- 1		*Can Full Expected Pressure Be Held At Previous Sho	oe?
Pressure At Previous Shoe	Max BHP22*(Setting I	Depth - Previo	us S	Shoe De	oth	1)=		NO	$\neg \neg$
Required Casing/BOPE To	est Pressure=						=	psi	_
*Max Pressure Allowed @	Previous Casing Shoe=							psi *Assumes 1psi/ft frac gradient	$\neg$
	_					11.5			

#### 43047512500000 NBU 921-25G2AS



Well name:

43047512500000 NBU 921-25G2AS

Minimum design factors:

Operator:

KERR-MCGEE OIL & GAS ONSHORE, L.P.

String type:

Surface

Project ID:

43-047-51250

Location:

UINTAH

COUNTY

**Environment:** 

Collapse

Mud weight:

Design parameters:

Collapse:

H2S considered?

No

8.330 ppg Design is based on evacuated pipe.

Design factor

Surface temperature: 1.125 Bottom hole temperature:

74 °F 106 °F

Temperature gradient: Minimum section length: 1.40 °F/100ft 100 ft

Burst:

Design factor

1.00

Cement top:

1,262 ft

**Burst** 

Dun

Max anticipated surface

No backup mud specified.

Saamont

pressure: Internal gradient: Calculated BHP

2,086 psi 0.120 psi/ft

2,360 psi

Nominal

Tension:

Buttress:

8 Round STC:

Neutral point:

1.80 (J) 8 Round LTC: 1.70 (J) 1.60 (J)

Premium: 1.50 (J) Body yield: 1.50 (B)

End

Tension is based on air weight. 2,071 ft Directional Info - Build & Drop

Kick-off point 300 ft Departure at shoe: 539 ft

Maximum dogleg: 2 °/100ft 20° Inclination at shoe:

Re subsequent strings:

Next setting depth: 9.640 ft Next mud weight: 12.400 ppg Next setting BHP: 6,210 psi Fracture mud wt: 19.250 ppg Fracture depth: 2,370 ft Injection pressure: 2,370 psi

Maggurad True Vort Drift Est.

Seq	Length (ft)	Size (in)	Weight (lbs/ft)	Grade	Finish	Depth (ft)	Depth (ft)	Diameter (in)	Cost (\$)	
1	2370	8.625	28.00	I-55	LT&C	2285	2370	7.892	93852	
Run Seq	Collapse Load (psi)	Collapse Strength (psi)	Collapse Design Factor	Burst Load (psi)	Burst Strength (psi)	Burst Design Factor	Tension Load (kips)	Tension Strength (kips)	Tension Design Factor	
1	989	1880	1.901	2360	3390	1.44	64	348	5.44 J	

Prepared

by:

Helen Sadik-Macdonald Div of Oil Gas & Mining

Phone: 801 538-5357 FAX: 801-359-3940

Date: October 6,2010 Salt Lake City, Utah

Remarks:

Collapse is based on a vertical depth of 2285 ft, a mud weight of 8.33 ppg. The casing is considered to be evacuated for collapse purposes. Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

Collapse strength is (biaxially) derated for doglegs in directional wells by multiplying the tensile stress by the cross section area to calculate a

Well name:

43047512500000 NBU 921-25G2AS

Operator:

KERR-MCGEE OIL & GAS ONSHORE, L.P.

String type:

Production

Project ID:

43-047-51250

Location:

UINTAH COUNTY

> Minimum design factors: **Environment:**

Collapse

Design parameters:

Mud weight: 12.400 ppg Internal fluid density: 2.330 ppg Collapse: Design factor

1.125

H2S considered?

No Surface temperature: 74 °F 209 °F Bottom hole temperature: 1.40 °F/100ft Temperature gradient:

Minimum section length:

100 ft

Burst:

Design factor

1.00 Cement top: 1.998 ft

**Burst** 

Max anticipated surface pressure:

No backup mud specified.

Internal gradient: Calculated BHP

4,089 psi 0.220 psi/ft 6,210 psi

Tension: 8 Round STC:

8 Round LTC: Buttress: Premium:

Body yield:

1.50 (J) 1.60 (B)

1.80 (J)

1.80 (J)

1.60 (J)

Directional Info - Build & Drop

Kick-off point 300 ft Departure at shoe: 1280 ft

Maximum dogleg: Inclination at shoe:

2 °/100ft 0°

Tension is based on air weight.

Neutral point:

8,058 ft

Run Seq	Segment Length	Size	Nominal Weight	Grade	End Finish	True Vert Depth	Measured Depth	Drift Diameter	Est. Cost
	(ft)	(in)	(lbs/ft)			(ft)	(ft)	(in)	(\$)
1	9845	4.5	11.60	I-80	LT&C	9640	9845	3.875	129954
Run	Collapse	Collapse	Collapse	Burst	Burst	Burst	Tension	Tension	Tension
Seq	Load	Strength	Design	Load	Strength	Design	Load	Strength	Design
•	(psi)	(psi)	Factor	(psi)	(psi)	Factor	(kips)	(kips)	Factor
1	5043	6360	1.261	6210	7780	1.25	111.8	212	1.90 J

Prepared

Helen Sadik-Macdonald Div of Oil, Gas & Mining

Phone: 801 538-5357 FAX: 801-359-3940

Date: October 6,2010 Salt Lake City, Utah

Remarks:

Collapse is based on a vertical depth of 9640 ft, a mud weight of 12.4 ppg. An internal gradient of .121 psi/ft was used for collapse from TD Collapse strength is based on the Westcott, Dunlop & Kemler method of biaxial correction for tension.

Burst strength is not adjusted for tension.

Collapse strength is (biaxially) derated for doglegs in directional wells by multiplying the tensile stress by the cross section area to calculate a

#### **ON-SITE PREDRILL EVALUATION**

### Utah Division of Oil, Gas and Mining

**Operator** KERR-MCGEE OIL & GAS ONSHORE, L.P.

Well Name NBU 921-25G2AS

API Number 43047512500000 APD No 2936 Field/Unit NATURAL BUTTES

**Location: 1/4,1/4** SENE **Sec** 25 **Tw** 9.0S **Rng** 21.0E 1484 FNL 763 FEL

GPS Coord (UTM) 628653 4429765 Surface Owner

#### **Participants**

Floyd Bartlett (DOGM), Sheila Wopsock, Clay Einerson, Roger Perry, Laura Gianokas, Lovel Young, Grizz Oleen, (Kerr McGee), Mitch.Batty, John Slaugh, (Timberline Engineering and Land Surveying), Ed Bonner (SITLA), Ben Williams (UDWR).

#### Regional/Local Setting & Topography

The general area is the Natural Buttes Unit in a major un-named drainage west of the lower portion of the Sand Wash drainage of Uintah, County, approximately 33 air miles and 41.8 road miles south of Vernal, Utah. Access is by State of Utah Highways, Uintah County and existing oilfield development roads. Topography of the area is characterized by open flats bordered or dissected by numerous sub-drainages, which often become steep with ridges and draws with exposed sandstone layers. No perennial streams occur in the drainage. Individual draws or washes are ephemeral with spring runoff or flows from sometimes-intense summer rainstorms. No springs exist in the area. An occasional constructed pond occurs furnishing water for antelope or livestock.

The NBU 921-25H pad will be an enlargement of the existing pad for the CIGE 142 gas well. It will be enlarged in all directions except to the west. The site is in gentle terrain. Off the site are gentle hills with exposed sandstone. No drainages intersect the site and no diversions are needed. Five new gas wells will be directionally drilled from this pad. They are the NBU 921-25G2AS, 921-25G1CS, 921-25H2AS, 921-25A3DS and 921-25H2DS. The White River is approximately 3 miles down drainage. The selected site appears to be a good location for constructing a pad, drilling and operating the proposed wells and is the best site in the immediate area. The Ute Tribal boundary fence is about 1/4 mile to the north.

Both the surface and minerals are owned by SITLA.

#### **Surface Use Plan**

**Current Surface Use** 

Grazing Wildlfe Habitat Existing Well Pad

New Road Miles Well Pad Src Const Material Surface Formation

0 Width 292 Length 465 Onsite UNTA

**Ancillary Facilities** N

#### **Waste Management Plan Adequate?**

#### **Environmental Parameters**

Affected Floodplains and/or Wetlands N

Flora / Fauna

10/7/2010 Page 1

Vegetation is a poor desert shrub type, which includes Gardner saltbrush, rabbitbrush, shadscale, curly mesquite, broom snakeweed, globemallow and halogeton..

Antelope, sheep during the winter, rabbits, coyotes, and small mammals, birds and raptors.

#### **Soil Type and Characteristics**

Surface soils are shallow and rocky.

**Erosion Issues** N

**Sedimentation Issues** N

Site Stability Issues N

**Drainage Diverson Required?** N

Berm Required? N

**Erosion Sedimentation Control Required?** N

Paleo Survey Run? Paleo Potental Observed? N Cultural Survey Run? Y Cultural Resources? N

#### **Reserve Pit**

Site-Specific Factors	Site R	anking	
Distance to Groundwater (feet)	100 to 200	5	
Distance to Surface Water (feet)	>1000	0	
Dist. Nearest Municipal Well (ft)	>5280	0	
Distance to Other Wells (feet)		20	
Native Soil Type	Mod permeability	10	
Fluid Type	Fresh Water	5	
Drill Cuttings	Normal Rock	0	
<b>Annual Precipitation (inches)</b>		0	
Affected Populations			
<b>Presence Nearby Utility Conduits</b>	Not Present	0	
	Final Score	40	1 Sensitivity Level

#### **Characteristics / Requirements**

The proposed reserve pit is 100' x 230' x 12' deep located in a cut on the northwest side of the location. Kerr McGee plans a 30-mil liner with a double felt sub-liner.

Closed Loop Mud Required? N Liner Required? Y Liner Thickness 30 Pit Underlayment Required? Y

#### **Other Observations / Comments**

Floyd Bartlett 8/26/2010

Evaluator Date / Time

10/7/2010 Page 2

10/7/2010

# **Application for Permit to Drill Statement of Basis**

Utah Division of Oil, Gas and Mining

Page 1

APD No	API WellNo	Status	Well Type	Surf Owner	<b>CBM</b>
2936	43047512500000	SITLA	GW	S	No
Operator	KERR-MCGEE OIL & GAS ONS	HORE, L.P.	<b>Surface Owner-APD</b>		
Well Name	NBU 921-25G2AS		Unit	NATURAL B	UTTES
Field	NATURAL BUTTES		Type of Work	DRILL	
Location	SENE 25 9S 21E S 1484	FNL 763 FEI	L GPS Coord (UTM)	628653E 4429	9766N

#### **Geologic Statement of Basis**

Kerr McGee proposes to set 2,370' of surface casing at this location. The depth to the base of the moderately saline water at this location is estimated to be at a depth of 900'. A search of Division of Water Rights records shows no water wells within a 10,000 foot radius of the center of Section 25. The surface formation at this site is the Uinta Formation. The Uinta Formation is made up of interbedded shales and sandstones. The sandstones are mostly lenticular and discontinuous and should not be a significant source of useable ground water. The proposed casing and cement should adequately protect any usable ground water.

Brad Hill 9/29/2010 **APD Evaluator Date / Time** 

#### **Surface Statement of Basis**

The general area is the Natural Buttes Unit in a major un-named drainage west of the lower portion of the Sand Wash drainage of Uintah, County, approximately 33 air miles and 41.8 road miles south of Vernal, Utah. Access is by State of Utah Highways, Uintah County and existing oilfield development roads. Topography of the area is characterized by open flats bordered or dissected by numerous sub-drainages, which often become steep with ridges and draws with exposed sandstone layers. No perennial streams occur in the drainage. Individual draws or washes are ephemeral with spring runoff or flows from sometimes-intense summer rainstorms. No springs exist in the area. An occasional constructed pond occurs furnishing water for antelope or livestock.

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Both the surface and minerals are owned by SITLA. Ed Bonner represented SITLA at the pre-site investigation. Mr. Bonner had no concerns pertaining to this location. SITLA will provide site reclamation standards and a seed mix.

Ben Williams represented the Utah Division of Wildlife Resources. Mr. Williams stated the area is classified as crucial yearlong antelope habitat but recommended no restrictions for this species. No other wildlife will be significantly affected.

Floyd Bartlett

Onsite Evaluator

8/26/2010 **Date / Time** 

10/7/2010

# **Application for Permit to Drill Statement of Basis**

Utah Division of Oil, Gas and Mining

Page 2

**Category** Condition

Pits A synthetic liner with a minimum thickness of 30 mils with a double felt subliner shall be properly installed and

maintained in the reserve pit.

Surface The reserve pit shall be fenced upon completion of drilling operations.

#### WORKSHEET APPLICATION FOR PERMIT TO DRILL

**APD RECEIVED: 8/13/2010 API NO. ASSIGNED:** 43047512500000

WELL NAME: NBU 921-25G2AS

**PHONE NUMBER:** 720 929-6156 **OPERATOR:** KERR-MCGEE OIL & GAS ONSHORE, L.P. (N2995)

**CONTACT:** Danielle Piernot

PROPOSED LOCATION: SENE 25 090S 210E **Permit Tech Review:** 

> SURFACE: 1484 FNL 0763 FEL **Engineering Review:**

> **BOTTOM:** 1439 FNL 2042 FEL Geology Review:

**COUNTY: UINTAH** 

**LATITUDE: 40.01019 LONGITUDE:** -109.49266

**UTM SURF EASTINGS: 628653.00** NORTHINGS: 4429766.00

FIELD NAME: NATURAL BUTTES

LEASE TYPE: 3 - State

LEASE NUMBER: UO 1189 ST PROPOSED PRODUCING FORMATION(S): WASATCH-MESA VERDE

**SURFACE OWNER: 3 - State COALBED METHANE: NO** 

#### **RECEIVED AND/OR REVIEWED: LOCATION AND SITING:**

✓ PLAT R649-2-3.

Unit: NATURAL BUTTES Bond: STATE/FEE - 22013542

**Potash** R649-3-2. General

Oil Shale 190-5

Oil Shale 190-3 R649-3-3. Exception

**Drilling Unit** Oil Shale 190-13

Board Cause No: Cause 173-14 Water Permit: Permit #43-8496

**Effective Date:** 12/2/1999 **RDCC Review:** 

Siting: Suspends General Siting **Fee Surface Agreement** 

✓ Intent to Commingle R649-3-11. Directional Drill

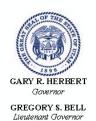
**Commingling Approved** 

**Comments:** Presite Completed

Stipulations:

3 - Commingling - ddoucet 5 - Statement of Basis - bhill 15 - Directional - dmason 17 - Oil Shale 190-5(b) - dmason 25 - Surface Casing - hmacdonald

API Well No: 43047512500000



# State of Utah

DEPARTMENT OF NATURAL RESOURCES

MICHAEL R. STYLER
Executive Director

Division of Oil, Gas and Mining

JOHN R. BAZA
Division Director

#### **Permit To Drill**

\*\*\*\*\*

Well Name: NBU 921-25G2AS API Well Number: 43047512500000 Lease Number: UO 1189 ST

Surface Owner: STATE Approval Date: 10/7/2010

#### **Issued to:**

KERR-MCGEE OIL & GAS ONSHORE, L.P., P.O. Box 173779, Denver, CO 80217

#### **Authority:**

Pursuant to Utah Code Ann. §40-6-1 et seq., and Utah Administrative Code R649-3-1 et seq., the Utah Division of Oil, Gas and Mining issues conditions of approval, and permit to drill the listed well. This permit is issued in accordance with the requirements of Cause 173-14. The expected producing formation or pool is the WASATCH-MESA VERDE Formation(s), completion into any other zones will require filing a Sundry Notice (Form 9). Completion and commingling of more than one pool will require approval in accordance with R649-3-22.

#### **Duration:**

This approval shall expire one year from the above date unless substantial and continuous operation is underway, or a request for extension is made prior to the expiration date

#### **Commingle:**

In accordance with Board Cause No. 173-14, commingling of the production from the Wasatch formation and the Mesaverde formation in this well is allowed.

#### General:

Compliance with the requirements of Utah Admin. R. 649-1 et seq., the Oil and Gas Conservation General Rules, and the applicable terms and provisions of the approved Application for permit to drill.

#### **Conditions of Approval:**

In accordance with Utah Admin. R.649-3-11, Directional Drilling, the operator shall submit a complete angular deviation and directional survey report to the Division within 30 days following completion of the well.

In accordance with the Order in Cause No. 190-5(b) dated October 28, 1982, the operator shall comply with the requirements of Rules R649-3-31 and R649-3-27 pertaining to Designated Oil Shale Areas. Additionally, the operators shall ensure that the surface and or production casing is properly cemented over the entire oil shale section as defined by Rule R649-3-31. The Operator shall report the actual depth the oil shale is encountered to the division.

Compliance with the Conditions of Approval/Application for Permit to Drill outlined in the Statement of Basis (copy attached).

Surface casing shall be cemented to the surface.

API Well No: 43047512500000

#### **Additional Approvals:**

The operator is required to obtain approval from the Division of Oil, Gas and mining before performing any of the following actions during the drilling of this well:

- Any changes to the approved drilling plan contact Dustin Doucet
- Significant plug back of the well contact Dustin Doucet
- Plug and abandonment of the well contact Dustin Doucet

#### **Notification Requirements:**

The operator is required to notify the Division of Oil, Gas and Mining of the following actions during drilling of this well:

- Within 24 hours following the spudding of the well contact Carol Daniels OR
- submit an electronic sundry notice (pre-registration required) via the Utah Oil & Gas website at https://oilgas.ogm.utah.gov
- 24 hours prior to testing blowout prevention equipment contact Dan Jarvis
- 24 hours prior to cementing or testing casing contact Dan Jarvis
- Within 24 hours of making any emergency changes to the approved drilling program contact Dustin Doucet
- 24 hours prior to commencing operations to plug and abandon the well contact Dan Jarvis

#### **Contact Information:**

The following are Division of Oil, Gas and Mining contacts and their telephone numbers (please leave a voicemail message if the person is not available to take the call):

- Carol Daniels 801-538-5284 office
- Dustin Doucet 801-538-5281 office

801-733-0983 - after office hours

• Dan Jarvis 801-538-5338 - office

801-231-8956 - after office hours

#### **Reporting Requirements:**

All reports, forms and submittals as required by the Utah Oil and Gas Conservation General Rules will be promptly filed with the Division of Oil, Gas and Mining, including but not limited to:

- Entity Action Form (Form 6) due within 5 days of spudding the well
- Monthly Status Report (Form 9) due by 5th day of the following calendar month
- Requests to Change Plans (Form 9) due prior to implementation
- Written Notice of Emergency Changes (Form 9) due within 5 days
- Notice of Operations Suspension or Resumption (Form 9) due prior to implementation
- Report of Water Encountered (Form 7) due within 30 days after completion
- Well Completion Report (Form 8) due within 30 days after completion or plugging

Approved By:

For John Rogers Associate Director, Oil & Gas

Do not use this form for proposition bottom-hole depth, reenter plu DRILL form for such proposals.  1. TYPE OF WELL Gas Well  2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ONSI	HORE, L.P.  PHONE treet, Suite 600, Denver, CO, 80217 3779	ON WELLS  cisting wells below current	5.LEASE DESIGNATION AND SERIAL NUMBER: UO 1189 ST  6. IF INDIAN, ALLOTTEE OR TRIBE NAME: 7.UNIT OF CA AGREEMENT NAME: NATURAL BUTTES  8. WELL NAME and NUMBER: NBU 921-25G2AS  9. API NUMBER: 43047512500000  9. FIELD and POOL OF WILDCAT: NATURAL BUTTES  COUNTY: UINTAH
Qtr/Qtr: SENE Section: 25	Township: 09.0S Range: 21.0E Meridian: S		STATE: UTAH
CHE	CK APPROPRIATE BOXES TO INDICATE	NATURE OF NOTICE, REPORT,	OR OTHER DATA
TYPE OF SUBMISSION		TYPE OF ACTION	
□ NOTICE OF INTENT Approximate date work will start: □ SUBSEQUENT REPORT Date of Work Completion:	ACIDIZE  CHANGE TO PREVIOUS PLANS  CHANGE WELL STATUS  DEEPEN  OPERATOR CHANGE	ALTER CASING CHANGE TUBING COMMINGLE PRODUCING FORMATIONS FRACTURE TREAT PLUG AND ABANDON	□ CASING REPAIR     □ CHANGE WELL NAME     □ CONVERT WELL TYPE     □ NEW CONSTRUCTION     □ PLUG BACK
✓ SPUD REPORT Date of Spud: 2/19/2011  □ DRILLING REPORT Report Date:	PRODUCTION START OR RESUME REPERFORATE CURRENT FORMATION TUBING REPAIR WATER SHUTOFF WILDCAT WELL DETERMINATION	RECLAMATION OF WELL SITE  SIDETRACK TO REPAIR WELL  VENT OR FLARE  SI TA STATUS EXTENSION  OTHER	RECOMPLETE DIFFERENT FORMATION TEMPORARY ABANDON WATER DISPOSAL APD EXTENSION OTHER:
MIRU PETE MARTIN RAN 14" 36.7# SCHI SPUD WELL L	MPLETED OPERATIONS. Clearly show all pertin BUCKET RIG. DRILLED 20" COIEDULE 10 CONDUCTOR PIPE. COCATION ON FEBRUARY 19, 20	NDUCTOR HOLE TO 40'. MT W/28 SX READY MIXA 11 AT 12:30 HRS.  Oil  FOR	
NAME (PLEASE PRINT) Andy Lytle	<b>PHONE NUMBER</b> 720 929-6100	TITLE Regulatory Analyst	
<b>SIGNATURE</b> N/A		<b>DATE</b> 2/22/2011	

	STATE OF UTAH		FORM 9
	DEPARTMENT OF NATURAL RESOURCE DIVISION OF OIL, GAS, AND MI		5.LEASE DESIGNATION AND SERIAL NUMBER: UO 1189 ST
SUND	RY NOTICES AND REPORTS	S ON WELLS	6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
	sals to drill new wells, significantly deepe ugged wells, or to drill horizontal laterals.		7.UNIT or CA AGREEMENT NAME: NATURAL BUTTES
1. TYPE OF WELL Gas Well			8. WELL NAME and NUMBER: NBU 921-25G2AS
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ONS	HORE, L.P.		9. API NUMBER: 43047512500000
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th S	PH Street, Suite 600, Denver, CO, 80217 377	<b>ONE NUMBER:</b> 9 720 929-6515 Ext	9. FIELD and POOL or WILDCAT: NATURAL BUTTES
4. LOCATION OF WELL FOOTAGES AT SURFACE: 1484 FNL 0763 FEL QTR/QTR, SECTION, TOWNSHI Qtr/Qtr: SENE Section: 25	<b>IP, RANGE, MERIDIAN:</b> Township: 09.0S Range: 21.0E Meridian:	S	COUNTY: UINTAH  STATE: UTAH
11. CHE	CK APPROPRIATE BOXES TO INDICA	ATE NATURE OF NOTICE, REPORT,	OR OTHER DATA
TYPE OF SUBMISSION		TYPE OF ACTION	
	☐ ACIDIZE	☐ ALTER CASING	CASING REPAIR
NOTICE OF INTENT Approximate date work will start:	CHANGE TO PREVIOUS PLANS	CHANGE TUBING	CHANGE WELL NAME
SUBSEQUENT REPORT	☐ CHANGE WELL STATUS	☐ COMMINGLE PRODUCING FORMATIONS ☐ FRACTURE TREAT	☐ CONVERT WELL TYPE ☐ NEW CONSTRUCTION
Date of Work Completion:	☐ OPERATOR CHANGE	☐ PLUG AND ABANDON	□ PLUG BACK
SPUD REPORT	☐ PRODUCTION START OR RESUME	☐ RECLAMATION OF WELL SITE	RECOMPLETE DIFFERENT FORMATION
Date of Spud:	☐ REPERFORATE CURRENT FORMATION	☐ SIDETRACK TO REPAIR WELL	☐ TEMPORARY ABANDON
	☐ TUBING REPAIR	☐ VENT OR FLARE	☐ WATER DISPOSAL
✓ DRILLING REPORT Report Date: 2/28/2011	☐ WATER SHUTOFF	☐ SI TA STATUS EXTENSION	APD EXTENSION
2/20/2011	☐ WILDCAT WELL DETERMINATION	OTHER	OTHER:
MIRU PROPETRO SURFACE HOLE TO BBLS FRESH WATER CLASS G PREM @ 1 PREM LITE @ 15.8 156 BBLS WATER. F 1000 PSI FOR 5 MI CEMENT FELL BACK.	OMPLETED OPERATIONS. Clearly show all page 2 AIR RIG #12 ON FEBRUARY 2610'. RAN 8 5/8" 28# IJ-55 R. PUMP 20 BBLS GEL WATER 1.0 PPG, 3.82 YD. TAILED CE PPG, 1.15 YD. DROP PLUG OF ULL CIRC. LIFT PRESSURE 55 IN. FLOAT HELD; 25 BBLS LE TOP OUT THRU 1" PIPE W/ 15 G, 1.15 YD. GOOD CEMENT T	26, 2011. DRILLED 11" S SURFACE CSG. PUMP 1504 LEAD CEMENT W/ 200 SX EMENT W/ 225 SX CLASSON N THE FLY, DISPLACED W/ SO PSI, BUMP PLUG & HOLD AD CEMENT TO SURFACE. 125 SX CLASS G PREM LITE	Accepted by the Utah Division of Utah Gas and Mining RECORD ONLY
NAME (PLEASE PRINT) Andy Lytle	<b>PHONE NUMBER</b> 720 929-6100	R TITLE Regulatory Analyst	
SIGNATURE N/A		<b>DATE</b> 3/2/2011	

Print Form

# **BLM - Vernal Field Office - Notification Form**

Ope	rator <u>KERR-McGEE OIL &amp; GA</u>	S Rig Name/# BUG	CKET RIG
Subr	nitted By ANDY LYTLE	Phone Number 72	0.929.6100
Well	Name/Number NBU 921-250	S2AS	
Qtr/0	Qtr <u>SENE</u> Section <u>25</u>	Township 98	Range 21E
Leas	e Serial Number <u>UO-1189ST</u>	en e	
API	Number <u>4304751250</u>		
	d Notice – Spud is the initial pelow a casing string.	spudding of the w	ell, not drilling
	Date/Time <u>02/17/2011</u>	08:00 HRS AM	PM 🔲
<u>Casi</u> time	ng – Please report time casi s.	ing run starts, not	cementing
<b>✓</b>	Surface Casing Intermediate Casing		RECEIVED
	Production Casing	•	FEB 1 5 2011
	Liner Other	DI	V. OF OIL, GAS & MINING
	Date/Time 03/23/2011	08:00 HRS AM	РМ
BOP	E Initial BOPE test at surface BOPE test at intermediate 30 day BOPE test Other	<b>-</b> .	
	Date/Time	AM [	РМ
Rem	arks estimated date and time. PLEA	SE CONTACT KENNY GATHING	S AT

#### STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS AND MINING

ENTITY ACTION FORM							
Operator:	KERR McGEE OIL & GAS ONSHORE LP	Operator Account Number: N 2995					
Address:	P.O. Box 173779						
	city DENVER	<del></del>					
	state CO zip 80217	Phone Number: (720) 929-6100					

Wall 1

API Number	Well	Name	QQ	Sec	Twp	Rng	County	
4304751249	NBU 921-25G1CS		SENE	25	098	21E UINTAH		
Action Code	Current Entity Number			Spud Date		Entity Assignment Effective Date		
B	99999	2900	2	2/19/2011		2/	2/28/11	
Comments: MIRU SPUI	J PETE MARTIN BUCKE D WELL LOCATION ON	TRIG. WST	105			L <i>31.</i> WNE		

Well 2

API Number	Well	Name	QQ	Sec	Twp	Rng	County	
4304751250	1250 NBU 921-25G2AS		SENE	25	098	21E	UINTAH	
Action Code	Current Entity Number	New Entity Number	New Entity Spud Date		te	Entity Assignment Effective Date		
B	99999	2900	2	2/19/201	1	2	1/28/11	
Comments: MIRU SPUI	J PETE MARTIN BUCKE D WELL LOCATION ON	TRIG. WS 79 02/19/2011 AT 12:30	VD HRS.	RW	- 01	UNE		

Well 3

API Number	Well Name		QQ	Sec	Twp	Rng	County
4304751375	NBU 921-35K4BS		NESW	35	098	21E	UINTAH
Action Code	Current Entity Number	New Entity Number	s	Spud Date		Entity Assignment Effective Date	
B	99999	3900	2	/17/201	1	<del>                                     </del>	3/28/11
Comments: MIRL SPUI	J PETE MARTIN BUCKE D WELL LOCATION ON	ET RIG. WS 7M 02/17/2011 AT 8:00	VD HRS.	B H1	_= /\	Esu	

#### **ACTION CODES:**

A - Establish new entity for new well (single well only)

B - Add new well to existing entity (group or unit well)

C - Re-assign well from one existing entity to another existing entity C - Re-assign well from one existing entity to a new entity

Other (Explain in 'comments' section)

RECEIVED

Signature **REGULATORY ANALYST** Title

ANDY LYTLE

Name (Please Print)

2/22/2011 Date

FEB 2 3 2011

(5/2000)

# State of Utah - Notification Form

Operator Anadarko Petroleum Rig Name/# Ensign 1	
Submitted By <u>SID ARMSTRONG</u> Phone Number	<u>435- 828-</u>
<u>0984</u>	
Well Name/Number <u>NBU-921-25G2AS</u>	
Qtr/Qtr <u>SE/NE</u> Section <u>25</u> Township <u>9S</u> Range	21E
Lease Serial Number <u>UO 1189 ST</u>	
API Number43047512500000	
<u>Casing</u> – Time casing run starts, not cementing times.	
Production Casing	
Other	
	RECEIVED
Date/Time AM PM	MAY 02 2011
	OF OIL, GAS & MINING
BOPE	or ormy or to or mindlest
Initial BOPE test at surface casing point	
Other	
	7
Date/Time $4/30/2011$ 01:00 AM $\bowtie$ PM $\mathrel{\bigsqcup}$	]
Rig Move	
Location To:	
Date/Time AM PM	
Demander DE CHIRDING DIG TO NIDLI 004 - 050040	
Remarks <u>BE SKIDDING RIG TO NBU 921 - 25G2AS</u>	
4/29/2011	

# State of Utah - Notification Form

Submitted By SID ARMSTRONG Phone Number 435- 828-	
<u>0984</u>	
Well Name/Number NBU-921-25G2AS  Qtr/Qtr SE/NE Section 25 Township 9S Range 21E  Lease Serial Number UO 1189 ST	
API Number43047512500000	
<u>Casing</u> – Time casing run starts, not cementing times.	
Production Casing Other	
Date/Time <u>5/6/2011</u> <u>12:00</u> AM ⊠ PM ⊠	
BOPE Initial BOPE test at surface casing point Other  RECEIVE MAY 0 5 201	
Date/Time AM PM DIV. OF OIL, GAS & MI	NING
Rig Move Location To: NBU-921-35E1CS	
Date/Time <u>5/8/2011</u> <u>09:00</u> AM ⊠ PM □	
Remarks <u>BE MOVING RIG TO NBU 921 - 35E1CS</u> 5/8/2011	

Sundry Number: 14949 API Well Number: 43047512500000

	STATE OF UTAH DEPARTMENT OF NATURAL RESOUR		FORM 9			
	5.LEASE DESIGNATION AND SERIAL NUMBER: UO 1189 ST					
SUND	RY NOTICES AND REPORTS	S ON WELLS	6. IF INDIAN, ALLOTTEE OR TRIBE NAME:			
Do not use this form for propo bottom-hole depth, reenter plu DRILL form for such proposals	sals to drill new wells, significantly deepe ugged wells, or to drill horizontal laterals.	n existing wells below current Use APPLICATION FOR PERMIT TO	7.UNIT or CA AGREEMENT NAME: NATURAL BUTTES			
1. TYPE OF WELL Gas Well			8. WELL NAME and NUMBER: NBU 921-25G2AS			
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ONS	HORE, L.P.		<b>9. API NUMBER:</b> 43047512500000			
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th S	9. FIELD and POOL or WILDCAT: NATURAL BUTTES					
4. LOCATION OF WELL FOOTAGES AT SURFACE: 1484 FNL 0763 FEL	COUNTY: UINTAH					
QTR/QTR, SECTION, TOWNSHI Qtr/Qtr: SENE Section: 25	STATE: UTAH					
11. CHE	CK APPROPRIATE BOXES TO INDICA	ATE NATURE OF NOTICE, REPORT,	, OR OTHER DATA			
TYPE OF SUBMISSION	TYPE OF ACTION					
MIRU ROTARY RIG. 2011. RAN 4-1, PRODUCTION CASIN HRS. DETAILS C COMPLETION REPORT	Actolize					
NAME (PLEASE PRINT) Andy Lytle	PHONE NUMBER	R TITLE Regulatory Analyst				
SIGNATURE	720 929-6100	DATE				

Sundry Number: 16911 API Well Number: 43047512500000

			FORM
	STATE OF UTAH		FORM 9
	DEPARTMENT OF NATURAL RESOURCES DIVISION OF OIL, GAS, AND MINI		5.LEASE DESIGNATION AND SERIAL NUMBER: UO 1189 ST
SUNDF	RY NOTICES AND REPORTS (	ON WELLS	6. IF INDIAN, ALLOTTEE OR TRIBE NAME:
Do not use this form for proposition-hole depth, reenter plu DRILL form for such proposals.	xisting wells below current e APPLICATION FOR PERMIT TO	7.UNIT or CA AGREEMENT NAME: NATURAL BUTTES	
1. TYPE OF WELL Gas Well			8. WELL NAME and NUMBER: NBU 921-25G2AS
2. NAME OF OPERATOR: KERR-MCGEE OIL & GAS ONS	HORE, L.P.		9. API NUMBER: 43047512500000
<b>3. ADDRESS OF OPERATOR:</b> P.O. Box 173779 1099 18th S	PHONI treet, Suite 600, Denver, CO, 80217 3779	<b>E NUMBER:</b> 720 929-6515 Ext	9. FIELD and POOL or WILDCAT: NATURAL BUTTES
4. LOCATION OF WELL FOOTAGES AT SURFACE: 1484 FNL 0763 FEL			COUNTY: UINTAH
QTR/QTR, SECTION, TOWNSHI	(P, RANGE, MERIDIAN: Township: 09.0S Range: 21.0E Meridian: S		STATE: UTAH
11. CHE	CK APPROPRIATE BOXES TO INDICATE	NATURE OF NOTICE, REPORT,	OR OTHER DATA
TYPE OF SUBMISSION		TYPE OF ACTION	
	☐ ACIDIZE	ALTER CASING	CASING REPAIR
☐ NOTICE OF INTENT	☐ CHANGE TO PREVIOUS PLANS	CHANGE TUBING	☐ CHANGE WELL NAME
Approximate date work will start:	☐ CHANGE WELL STATUS	COMMINGLE PRODUCING FORMATIONS	☐ CONVERT WELL TYPE
☐ SUBSEQUENT REPORT	DEEPEN	FRACTURE TREAT	☐ NEW CONSTRUCTION
Date of Work Completion:	OPERATOR CHANGE	PLUG AND ABANDON	□ PLUG BACK
		_	
SPUD REPORT Date of Spud:	✓ PRODUCTION START OR RESUME	RECLAMATION OF WELL SITE	☐ RECOMPLETE DIFFERENT FORMATION
	☐ REPERFORATE CURRENT FORMATION	SIDETRACK TO REPAIR WELL	☐ TEMPORARY ABANDON
✓ DRILLING REPORT	☐ TUBING REPAIR	✓ VENT OR FLARE	☐ WATER DISPOSAL
Report Date: 7/22/2011	☐ WATER SHUTOFF	☐ SI TA STATUS EXTENSION	☐ APD EXTENSION
//22/2011	☐ WILDCAT WELL DETERMINATION	OTHER	OTHER:
THE SUBJECT WELL	MPLETED OPERATIONS. Clearly show all perting WAS PLACED ON PRODUCTION OGICAL WELL HISTORY WILL BITTON REPOR	ON 07/22/2011 AT 5:30 E SUBMITTED WITH THE T. A U	accepted by the Itah Division of , Gas and Mining R RECORD ONLY
NAME (PLEASE PRINT) Sheila Wopsock	<b>PHONE NUMBER</b> 435 781-7024	TITLE Regulatory Analyst	
SIGNATURE N/A		<b>DATE</b> 7/25/2011	

### STATE OF UTAH AMENDED REPORT FORM 8 DEPARTMENT OF NATURAL RESOURCES (highlight changes) DIVISION OF OIL. GAS AND MINING 5. LEASE DESIGNATION AND SERIAL NUMBER: **UO 1189 ST** 6. IF INDIAN, ALLOTTEE OR TRIBE NAME WELL COMPLETION OR RECOMPLETION REPORT AND LOG 1a. TYPE OF WELL: WELL GAS VIEL 7. UNIT or CA AGREEMENT NAME OTHER UTU63047A b. TYPE OF WORK: 8. WELL NAME and NUMBER: DIFF. RESVR. WEW Z HORIZ. RE-ENTRY NBU 921-25G2AS 2 NAME OF OPERATOR 9. API NUMBER: KERR MCGEE OIL & GAS ONSHORE, L.P. 4304751250 3. ADDRESS OF OPERATOR: PHONE NUMBER: 10 FIELD AND POOL, OR WILDCAT P.O.BOX 173779 STATE CO ZIP 80217 **NATURAL BUTTES** CITY DENVER (720) 929-6100 4. LOCATION OF WELL (FOOTAGES) BITL reviewed by JP 11. QTR/QTR, SECTION, TOWNSHIP, RANGE, MERIDIAN AT SURFACE: SENE 1484 FNL 763 FEL S25, T9S, R21E SENE 25 98 21E S AT TOP PRODUCING INTERVAL REPORTED BELOW: SWNE 1407 FNL 1940 FEL S25, T9S, R21E 12. COUNTY 13. STATE AT TOTAL DEPTH: SWNE 1456 FNL 2029 FEL \$25, T9S, R21E UTAH UINTAH 14. DATE SPUDDED: 15. DATE T.D. REACHED: 16. DATE COMPLETED: 17. ELEVATIONS (DF, RKB, RT, GL): ABANDONED READY TO PRODUCE 🗸 2/19/2011 5/6/2011 7/22/2011 4914 GL 18. TOTAL DEPTH: MD 19. PLUG BACK T.D.: MD 9.764 9.820 21. DEPTH BRIDGE 20. IF MULTIPLE COMPLETIONS, HOW MANY? PLUG SET: TVD 9.664 TVD 9.608 TVD 22. TYPE ELECTRIC AND OTHER MECHANICAL LOGS RUN (Submit copy of each) NO 🗸 WAS WELL CORED? YES (Submit analysis) RCBL-CHI TRIPLE COMBO-RMTE WAS DST RUN? ио 🗸 YES (Submit report) DIRECTIONAL SURVEY? NO YES 7 (Submit copy) 24. CASING AND LINER RECORD (Report all strings set in well) STAGE CEMENTER **CEMENT TYPE &** SLURRY HOLE SIZE SIZE/GRADE WEIGHT (#/ft.) TOP (MD) BOTTOM (MD) CEMENT TOP \*\* AMOUNT PULLED DEPTH VOLUME (BBL) NO. OF SACKS 20" 14" STL 36.7# 40 11" 8 5/8" **IJ-55** 28# 2,591 550 0 7 7/8" 4 1/2" 1-80 11.6# 9.550 1,650 270 7 7/8" 11.6# 4 1/2" P110 9,550 9,807 25. TUBING RECORD DEPTH SET (MD) SIZE PACKER SET (MD) SIZE DEPTH SET (MD) PACKER SET (MD) DEPTH SET (MD) PACKER SET (MD) 2 3/8" 9.011 26. PRODUCING INTERVALS 27. PERFORATION RECORD FORMATION NAME TOP (MD) BOTTOM (MD) TOP (TVD) BOTTOM (TVD) INTERVAL (Top/Bot - MD) SIZE NO. HOLES PERFORATION STATUS (A) WASATCH 6.477 7.279 7,279 6,477 0.36 48 Open 🗸 Squeezed (B) **MESAVERDE** 7,604 9,608 7.604 9.608 0.36 213 Open Squeezed (C) Open Squeezed (D) Squeezed 28. ACID, FRACTURE, TREATMENT, CEMENT SQUEEZE, ETC. DEPTH INTERVAL AMOUNT AND TYPE OF MATERIAL 6477 - 9608 PUMP 10,820 BBLS SLICK H2O & 266,781 LBS SAND 29. ENCLOSED ATTACHMENTS: 30. WELL STATUS: ELECTRICAL/MECHANICAL LOGS GEOLOGIC REPORT ✓ DIRECTIONAL SURVEY DST REPORT **PROD** SUNDRY NOTICE FOR PLUGGING AND CEMENT VERIFICATION

(5/2000)

(CONTINUED ON BACK)

**CORE ANALYSIS** 

OTHER:

AUG 2 9 2011

24	IAUTTA A I	PPODICTION	

### INTERVAL A (As shown in item #26)

DATE FIRST PRODUCE 7/22/2011	D:	TEST DATE:								
7/22/2011				HOURS TESTER	);	TEST PRODUCTION	OIL - BBL:	GAS - MCF:	WATER - BBL:	PROD. METHOD:
		8/13/201 <sup>-</sup>	1		24	RATES: →	0	1,995	305	FLOWING
	RESS. ,650	CSG. PRESS. 2,400	API GRAVITY	BTU - GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL – BBL:	GAS - MCF: 1,995	WATER - BBL:	INTERVAL STATUS PROD
		<u> </u>		INT	ERVAL B (As show	wn in item #26)	<u></u>		<u>-1</u>	. <del>L </del>
DATE FIRST PRODUCE	D:	TEST DATE:		HOURS TESTED	);	TEST PRODUCTION RATES: →	OIL BBL:	GAS - MCF:	WATER - BBL:	PROD. METHOD:
CHOKE SIZE: TBG. I	PRESS.	CSG. PRESS.	API GRAVITY	BTU – GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL – BBL:	GAS - MCF:	WATER - BBL:	INTERVAL STATUS
	······································	• • • • • • • • • • • • • • • • • • •		INT	ERVAL C (As show	wn in item #26)	**************************************			
DATE FIRST PRODUCE	D:	TEST DATE:		HOURS TESTED	D:	TEST PRODUCTION RATES: →	OIL – BBL:	GAS - MCF:	WATER - BBL:	PROD. METHOD:
CHOKE SIZE: TBG. I	PRESS.	CSG. PRESS.	API GRAVITY	BTU – GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL BBL:	GAS - MCF:	WATER BBL:	INTERVAL STATUS
		•		INT	ERVAL D (As show	wn in Item #26)	<u> </u>		······································	***************************************
DATE FIRST PRODUCE	D:	TEST DATE:		HOURS TESTED	D:	TEST PRODUCTION RATES: →	OIL – BBL:	GAS - MCF:	WATER - BBL:	PROD. METHOD:
CHOKE SIZE: TBG. I	PRESS.	CSG. PRESS.	API GRAVITY	BTU – GAS	GAS/OIL RATIO	24 HR PRODUCTION RATES: →	OIL BBL:	GAS - MCF:	WATER - BBL:	INTERVAL STATUS

### 33. SUMMARY OF POROUS ZONES (Include Aquifers):

Show all important zones of porosity and contents thereof: Cored intervals and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures and recoveries.

34. FORMATION (Log) MARKERS:

Formation	Top (MD)	Bottom (MD)	Descriptions, Contents, etc.	Name	Top (Measured Depth)
GREEN RIVER BIRD'S NEST MAHOGANY WASATCH MESAVERDE	1,514 1,824 2,213 4,825 7,589	7,589 9,820	TD		

35. ADDITIONAL REMARKS (include plugging procedure)

Attached is the chronological well history, perforation report and final survey.

36.	I hereby certify that the	foregoing and attached	l information is compl	lete and correct as	determined from all	available records

NAME (PLEASE PRINT) ANDREW LYTLE
SIGNATURE

TITLE REGULATORY ANALYST

<sub>r=</sub> 8/25/2011

This report must be submitted within 30 days of

- completing or plugging a new well
- · drilling horizontal laterals from an existing well bore
- recompleting to a different producing formation
- reentering a previously plugged and abandoned well
- significantly deepening an existing well bore below the previous bottom-hole depth
- · drilling hydrocarbon exploratory holes, such as core samples and stratigraphic tests

\* ITEM 20: Show the number of completions if production is measured separately from two or more formations.

\*\* ITEM 24: Cement Top - Show how reported top(s) of cement were determined (circulated (CIR), calculated (CAL), cement bond log (CBL), temperature survey (TS)).

Send to:

Utah Division of Oil, Gas and Mining 1594 West North Temple, Suite 1210

Box 145801

Salt Lake City, Utah 84114-5801

Phone: 801-538-5340

Fax: 801-359-3940

Well: NBU 921	-25G2A	S IREDI				: 2/18/20		Iry Report Spud Date: 2/27/2011
Project: UTAH-	<del></del>	<del></del>		Site: NB			F 1	Rig Name No: ENSIGN 139/139, PROPETRO
							7	12/12
Event: DRILLIN		····		Start Da	te: 12/7/2	2010		End Date: 5/7/2011
Active Datum: f Level)	RKB @4	1,928.00ft (a	above Mean	Sea	UWI: S	E/NE/0/9	/S/21/E/2	25/0/0/26/PM/N/1484/E/0/763/0/0
Date	1 7 4 4 7 7 7	Time art-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From Operation (ft)
2/26/2011	11:30	- 17:00	5.50	MIRU	01	Α	Р	MOVE RIG IN OFF THE NBU 921-3504CS
	17:00	- 0:00	7.00	MIRU	01	В	P	RIG UP, PREPARE TO SPUD 11" SURF. HOLE
2/27/2011		- 0:30		DRLSUR	06	Α	P	P/U 1.83 DEG BENT HOUSING HUNTING MTR S 8011 . 7/8 LOBE .17 RPG. M/U Q506 SN 7024086 1ST RUN, W/ 6-18'S. INSTALL RUBBER
	0:30	- 1:30	1.00	DRLSUR	02	В	P	SPUD SURFACE 02/27/2010 @ 00:30 HRS. DRILI 11" SURFACE HOLE F/40'-210' (170' @ 170'/HR) PSI ON/ OFF 690/410, UP/ DOWN/ ROT 25/20/22. 532 GPM, 45 RPM ON TOP DRIVE,90 RPM ON M 15-18K WOB
	1:30	- 3:30	2.00	DRLSUR	06	Α	P	TOH,P/U DIR TOOLS & SCRIBE,TIH T/210'
	3:30	- 15:00	11.50	DRLSUR	02	D	Р	DRILL/ SLIDE 11" SURFACE HOLE F/ 210'-1630' (1420' @ 123'/HR) PSI ON/ OFF 1300/1100, UP/ DOWN/ ROT 61/59/60 130 SPM, 532 GPM, 18-22k WOB, 45 RPM ON TOP DRIVE,90 RPM ON MM, CIRC RESERVE PIT
	15:00	- 0:00	9.00	DRLSUR	02	D	Р	DRILL/ SLIDE 11" SURFACE HOLE F/1630'-2320' (690' @ 77'/HR) PSI ON/ OFF 1500/1300, UP/ DOWN/ ROT 82/70/75 130 SPM, 532 GPM, 18-22\text{VOB, 45 RPM ON TOP DRIVE,90 RPM ON MM,}

(290' @ 73'/HR) PSI ON/ OFF 1530/1330, UP/ DOWN/ ROT 82/70/75 130 SPM, 532 GPM, 18-22K WOB, 45 RPM ON TOP DRIVE,90 RPM ON MM. CIRC RESERVE PIT,TD 11" DIR. SURF. HOLE @ 04:00 4:00 - 6:00 2.00 DRLSUR 05 С Ρ CIRC & COND HOLE F/LD & 8 5/8" 28# SURF, CSG RUN 6:00 - 10:30 4.50 DRLSUR P กล D L/D DRILL STRING,11" BHA & DIR. TOOLS 10:30 - 11:30 1.00 CSG 12 Α R/U T/RUN 8 5/8" 28# SURF. CSG 11:30 - 15:00 Ρ 3.50 CSG 12 C HOLD SAFTEY MEETING.RUN FLOAT SHOE, SHOE JNT, BAFFEL & 57 JNTS 8 5/8" 28# J-55 LT&C CSG W/THE SHOE SET @2581' & THE

BAFFEL @2535' 15:00 - 16:00 1.00 CSG 12 Р RUN 100' 1" PIPE DOWN ANNULUS,R/U PRO Α PETRO CEMENTING EQUIP. 16:00 - 17:00 1.00 CSG Ε P 12 HOLD SAFETY MEETING, PSI TEST TO 2000 PSI. PUMP 150 BBLS OF 8.3# H20 AHEAD. FULL CIRC. PUMP 20 BBLS OF 8.4# GEL WATER AHEAD. FULL CIRC. PUMP 200 SX(136.1 BBLS) 11# 3.82 YIELD LEAD CEMENT, PUMP 225 SX (46 BBLS) OF 15.8# 1.15 YIELD TAIL(2% CALC, 1/4# /SK OF FLOCELE). DROP PLUG ON FLY AND DISPLACE W/156 BBLS OF 8.3# H20.FULL CIRC LIFT PRESSURE WAS 550 PSI, BUMP PLUG AND HOLD 1000 PSI FOR 5 MIN.FLOAT HELD,25 BBLS LEAD

CIRC RESERVE PIT

DRILL/ SLIDE 11" SURFACE HOLE F/2320'-2610'

2/28/2011

0:00 - 4:00

4.00

DRLSUR

02

D

## Operation Summary Report

Well: NBU 921	-25G2AS [RED]		Spud Co	onducto	r: 2/18/20	111	Spud Date: 2/2	7/2011
Project: UTAH	-UINTAH	Site: NB	U 921-2	5H PAD			Rig Name No: ENSIGN 139/139, PROPETRO	
Event: DRILLING Start D					/2010	1		12/12 End Date: 5/7/2011
Active Datum: .evel)	RKB @4,928.00ft (	above Mea		· · · · · · · · · · · · · · · · · · ·	~~~~	)/S/21/E/:	25/0/0/26/PM/N/	1484/E/0/763/0/0
Date	Time Start-End	Duration	Phase	Code		P/U	MD From	Operation
the state of the s	17:30 - 17:30	(hr) 0.00	CSG		Code		(ft)	
	17.00	0.00	000					CONDUCTOR CASING: Cond. Depth set: 40' Cement sx used: 28
								SPUD DATE/TIME: 2/27/2001 0:30
								SURFACE HOLE: Surface From depth: 40' Surface To depth: 2,610 Total SURFACE hours: 25.50 Surface Casing size: 8 5/8 # of casing joints ran: 58 Casing set MD: 2,581.0 # sx of cement: 200/225/125 Cement blend (ppg:) 11.0/15.8/15.8 Cement yield (ft3/sk): 3.82/1.15/1.15 # of bbls to surface: Describe cement issues: NONE Describe hole issues: NONE
4/29/2011	19:00 - 20:00	1.00	DRLPRO	01	С	P		R/D & SKID RIG
	20:00 - 22:00	2.00	DRLPRO	14	A	P		N/U B.O.P'S & FLARE LINES
	22:00 - 0:00	2.00	DRLPRO	09	A	P		CUT DRLG LINE
4/30/2011	0:00 - 0:30	0.50	DRLPRO	09	A	Р		FINISH CUT DRILL LINE
	0:30 - 1:00	0.50	DRLPRO	07	A	Þ		RIG SER & SERTOP DRIVE
	1:00 - 4:30	3.50	DRLPRO	15 14	A B	P P		TEST B.O.P'S - BLINDS-PIPE RAMS- 4" - 2" VALVES - HCR - CHOKE MAINFOLD - 250 LOW 5000 HIGH - ANNULAR 250 LOW 2500 HIGH - CASING TO 1500 PSI
	5:00 - 9:00	4.00	DRLPRO					SET WEAR BUSHING
				06	A	P		P/U MOTOR - BIT & DIR TOOLS & T.I.H & TAG CEMENT @ 2465
	9:00 - 10:00 10:00 - 0:00	1.00	DRLPRO	02	F	P		DRILL SHOE TRACK
		14.00	DRLPRO	02	D	Р		DIRDRILL F/ 2620 TO 4060 = 1440'AVG 102.8 ,WO 16/20,RPM 40/143,GPM 510 ,STKS 104,PSI 1550/1250 ,TORQ 8/5 - SLIDE 30 % - RES WATER
5/1/2011	0:00 - 13:00	13.00	DRLPRO	02	D	P		DIRDRILL F/ 4060 TO 5108 = 1048'AVG 80.6 ,WOE 16/20,RPM 40/143,GPM 510 ,STKS 104,PSI 1700/1400 ,TORQ 8/5 - SLIDE 37 % - RES WATER
	13:00 - 13:30	0.50	DRLPRO	07	Α	P		SER RIG
	13:30 - 0:00	10.50	DRLPRO	02	D	Р	ļ	DIRDRILL F/ 5108 TO 6070 = 962' AVG 91.6 ,WO 16/20,RPM 40/143,GPM 510 ,STKS 104,PSI 1550/1250 ,TORQ 8/5 - SLIDE 25 % - RES WATER LOST RETURNS @ 5852 PUMP LCM SWEEPS - GEL UP SYSTEM & RAISE LCM TO 3% -TOTAL LOST 125 BBLS
5/2/2011	0:00 - 18:00	18.00	DRLPRO	02	D	P	!	DIRDRILL F/ 6070 TO 7010 = 940 ' AVG 52.2 ,WO 16/20,RPM 40/143,GPM 491 ,STKS 100,PSI 2100/1800 ,TORQ 10/8 - SLIDE 7% -MW 9.8 VIS 38 LCM 6%
	18:00 - 18:30	0.50	DRLPRO	07	Α	P		SER RIG
	18:30 - 0:00	5.50	DRLPRO	02	D	Р		DIRDRILL F/ 7010 TO 7212 = 202 ' AVG 36.7 ,WO 16/20,RPM 40/143,GPM 491 ,STKS 100,PSI 1550/1250 ,TORQ 8/5 - SLIDE 10% -MW 10.5 VIS 3. _CM 8%
5/3/2011	0:00 - 19:30	19.50	DRLPRO	02	D	P	!	DIRDRILL F/ 7212 TO 7825 = 613 ' AVG 31.4 ,WOE 16/20,RPM 40/143,GPM 491 ,STKS 100,PSI 2200/1900 ,TORQ 10/8 - SLIDE 14% -MW 10.9 VIS 42 LCM 11%
	19:30 - 20:00	0.50	DRLPRO	07	Α	Р		SER RIG

8/15/2011 2:33:47PM

### Operation Summary Report

Well: NBU 92	1-25G2AS [I	RED]		Spud Co	nductor:	2/18/20	11	Spud Date: 2/27/2011
Project: UTAH-UINTAH Site: 1					U 921-25	5H PAD		Rig Name No: ENSIGN 139/139, PROPETRO 12/12
Event: DRILLING Start Da			Start Dat	te: 12/7/2	2010		End Date: 5/7/2011	
Active Datum Level)	: RKB @4,92	28.00ft (	above Mean	Sea	UWI: S	E/NE/0/9	/S/21/E/:	25/0/0/26/PM/N/1484/E/0/763/0/0
Date	Tim Start-	End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From Operation (ft)
	20:00 -	0:00	4.00	DRLPRO	02	D	P	DIRDRILL F/ 7825 TO 7930 = 105 ' AVG 26.25 ,V 16/20,RPM 40/143,GPM 491 ,STKS 100,PSI 2200/1900 ,TORQ 10/8 - SLIDE 6% -MW 11.0 VIS LCM 11%
5/4/2011	0:00 -		5.50	DRLPRO	02	D	Р	DIRDRILL F/ 7930 TO 8095 = 165 ' AVG 30.0 ,W0 16/20,RPM 40/143,GPM 491 ,STKS 100,PSI 2200/1900 ,TORQ 10/8 - SLIDE 6% -MW 11.2 VIS LCM 11%
	5:30 -		7.00	DRLPRO	06	Α	P	T.F.N.B - ( PULL 5 STANDS W/ PUMP NO ROT ) PUMP DRY JOB & CONT. T.O.H & BACK REAM TIGHT SPOT F/ 4776 TO 4423 & CONT. T.O.H - MOTOR & BIT
	12:30 -		7.50	DRLPRO	06	Α	P	P/U MOTOR & BIT & T.I.H & WASH SPOTS @ 6 TO 6838 @ 7850 CONT. T.I.H - WASH TO BTM ( FILL )
	20:00 -	0:00	4.00	DRLPRO	02	D	P	DIRDRILL F 8095 TO 8282 = 187 ' AVG 46.75 ,W 16/20,RPM 40/143,GPM 491 ,STKS 100,PSI 2200/1900 ,TORQ 10/8 - SLIDE 5% -MW 11.4 VIS LCM 11%
5/5/2011	0:00 ~	12:00	12.00	DRLPRO	02	D	P	DIR DRILL F/ 8282 TO 9006 = 724 ' AVG 60.3 ,WOB 16/20,RPM 40/143,GPM 491 ,STKS 100,P: 2200/1900 ,TORQ 10/8 - SLIDE 12% -MW 11.8 V 42 LCM 13%
	12:00 -	12:30	0.50	DRLPRO	07	Α	Р	SER RIG
	12:30 -	0:00	11.50	DRLPRO	02	D	Р	DIR DRILL F/ 9006 TO 9671 = 665 ' AVG 57.8 ,WOB 16/20,RPM 40/143,GPM 491 ,STKS 100,P: 2200/1900 ,TORQ 10/8 - SLIDE 5% -MW 12.3 VIS LCM 20% ( @ 9611 LOST 65 BBLS RAISE LCM 20% )
5/6/2011	0:00 -	3:00	3.00	DRLPRO	02	D	Р	DIR DRILL F/ 9671 TO 9820 = 149 ' AVG 49.6 ,W 16/20,RPM 40/143,GPM 491 ,STKS 100,PSI 200/2100 ,TORQ 10/8 - SLIDE 0% -MW 12.3 VIS LCM 20%
		4:00	1.00	DRLPRO	05	Α	P	CIRC BTM UP
	4:00 -		4.00	DRLPRO	06	E	P	WIPER TRIP PUMPED OUT 18 STANDS & PULL STANDS (NO PUMP OR ROT)
	8:00 - 9:30 -		1.50	DRLPRO	05	A	Р	CIRC BTM UP TWICE
	3.30 -	22.30	13.00	DRLPRO	06	Α	Р	T.O.H F/ CASING - ( L/D D.P & BHA & DIR TOOL PULL WEAR BUSHING
	22:30 -	0:00	1.50	DRLPRO	12	С	P	HELD S/M & R/U FRANKS CASING & RUN 232 PLUS 2 MARKERS SHOE SET @ 9793 FLOAT COLLAR @ 9751
5/7/2011	0:00 -		2.00	DRLPRO	12	С	Р	FINISH RUNIING PROD CASING & CIRC @ 847 2550
	2:00 -	3:00	1.00	DRLPRO	05	D	X	TRY TO FILL PIPE W/ SUFACE EQUIPMENT (HOSE) WAS PLUG HOSE COME PART INSIDE OR LCM - FILL CSG W/ TOPDRIVE & CIRC OK
	3:00 -		6.50	DRLPRO	12	С	Р	CONT. TO RUN PROD STRING
	9:30 -		1.00	DRLPRO	05	Α	P	CIRC BTM UP
	10:30 -		2.00	DRLPRO	12	E	Р	SAFETY MEET W/ BJ,PUMP 40 BBLS SPACER, SX LEAD @ 12.3# 2.12 YLD,1150 SX TAIL@ 14. 1.31YLD,DISPLACE 151.7 BBLS CLAYFIX,FINAL LIFT PSI 2650 PSI,BUMPPLUG 500 OVER,FLOA HELD, GOT BACK ALL SPACER & 8 BBLS CEMENT TO PIT
	12:30 -	16:00	3.50	DRLPRO	14	Α	Р	N/U DOWN & SET SLIPS 90K STRING WT & CU OFF & WASH CLEAN OUT MUD TANKS & RELEASED RIG @ 04:00 HRS ON 5/72011

8/15/2011

2:33:47PM

Well: NBU 921-25G2AS [RED]			ud Date: 2/27/2011		
Project: UTAH-UINTAH	Site: N	BU 921-25H PAD	Rig Name No: ENSIGN 139/139, PROPETRO 12/12		
vent: DRILLING		Pate: 12/7/2010	End Date: 5/7/2011		
ctive Datum: RKB @4,928.00ft (above Mevel)	lean Sea	UWI: SE/NE/0/9/S/21/E/25/0/	/0/26/PM/N/1484/E/0/763/0/0		
Date Time Durati Start-End (hr)		Code Sub P/U M	ID From Operation (ft)		
16:00 - 16:00 0.00			CONDUCTOR CASING:		
			Cond. Depth set: 40 Cement sx used: 28		
			SPUD DATE/TIME: 2/27/2011 0:30		
			SURFACE HOLE:		
			Surface From depth: 40		
			Surface To depth: 2,610 Total SURFACE hours: 25.50		
			Surface Casing size: 8 5/8		
			# of casing joints ran: 58		
			Casing set MD: 2,581.0		
			# sx of cement: 550		
			Cement blend (ppg:) 15.8		
			Cement yield (ft3/sk): 1.15		
			# of bbls to surface:		
		•	Describe cement issues: NA Describe hole issues: NA		
			PRODUCTION:		
			Rig Move/Skid start date/time: 4/29/2011 19:00		
			Rig Move/Skid finish date/time: 4/29/2011 20:		
			Total MOVE hours: 1.0		
			Prod Rig Spud date/time: 4/30/2011 0:00 Rig Release date/time: 5/7/2011 16:00		
			Total SPUD to RR hours: 184.0		
			Planned depth MD 9,802		
			Planned depth TVD 9,640		
			Actual MD: 9,820		
			Actual TVD: 9,664		
			Open Wells \$:		
			AFE \$:		
			Open wells \$/ft;		
			PRODUCTION HOLE:		
			Prod. From depth: 2,620		
			Prod. To depth: 9,820		
			Total PROD hours: 12.5		
			Log Depth: NO LOGS		
			Float Collar Top Depth: 9747		
			Production Casing size: 4 1/2		
			# of casing joints ran: 234		
			Casing set MD: 9,793.0		
			Stage 1		
			# sx of cement: 500 LEAD 1150 TAIL		
			Cement density (ppg:) 12.3/14.3		
			Cement yield (ft3/sk): 2.12/1.31 Stage 2		
			# sx of cement:		
			Cement density (ppg:)		
			Cement density (ppg.) Cement yield (ft3/sk):		
			Top Out Cmt		
			# sx of cement:		
			Cement density (ppg:)		
			Cement yield (ft3/sk):		
			Est. TOC (Lead & Tail) or 2 Stage :		
			Describe cement issues: 8 BBLS CEMENT TO		
			SUFACE		
			Describe hole issues:		
			DIRECTIONAL INFO:		
			KOP: 331		
			Max angle: 15.47		

8/15/2011

	O		KIES REGION ummary Report
Well: NBU 921-25G2AS [RED]	Spud Co	onductor: 2/18/201	11 Spud Date: 2/27/2011
Project: UTAH-UINTAH	Site: NB	U 921-25H PAD	Rig Name No: ENSIGN 139/139, PROPETRO 12/12
Event: DRILLING	Start Da	te: 12/7/2010	End Date: 5/7/2011
Active Datum: RKB @4,928.00ft (above Level)	Mean Sea	UWI: SE/NE/0/9/	/S/21/E/25/0/0/26/PM/N/1484/E/0/763/0/0
Date Time Dura Start-End (h		Code Sub Code	P/U MD From Operation (ft)
			Departure: 1296.50
			Max dogleg MD: 2.56

8/15/2011

2:33:47PM

### 1 General

### 1.1 Customer Information

Company	US ROCKIES REGION
Representative	
Address	

### 1.2 Well Information

Well	NBU 921-25G2AS [RED]		The state of the s
Common Name	NBU 921-25G2AS		
Well Name	NBU 921-25G2AS	Wellbore No.	ОН
Report No.	1	Report Date	7/5/2011
Project	UTAH-UINTAH	Site	NBU 921-25H PAD
Rig Name/No.		Event	COMPLETION
Start Date	7/5/2011	End Date	7/25/2011
Spud Date	2/27/2011	Active Datum	RKB @4,928.00ft (above Mean Sea Level)
UWI	SE/NE/0/9/S/21/E/25/0/0/26/PM/N/1484/E/	0/763/0/0	

### 1.3 General

Contractor	CUTTERS WIRELINE	Job Method	PERFORATE	Supervisor	KEN WARREN
Perforated Assembly	PRODUCTION CASING	Conveyed Method	WIRELINE		

### 1.4 Initial Conditions

### 1.5 Summary

Fluid Type		Fluid Density	Gross Interval	6,477.0 (ft)-9,608.0 (ft)	Start Date/Time	7/5/2011	12:00AM
Surface Press		Estimate Res Press	No. of Intervals	42	End Date/Time	7/5/2011	12:00AM
TVD Fluid Top		Fluid Head	Total Shots	261	Net Perforation Interval		72.00 (ft)
Hydrostatic Press		Press Difference	Avg Shot Density	3.62 (shot/ft)	Final Surface Pressure		
Balance Cond	NEUTRAL				Final Press Date		

### 2 Intervals

### 2.1 Perforated Interval

Date Formation/ CCL@	CCL-T MD Top	MD Base S	Shot Misfires	Diamete Carr Type /Carr Manuf	Carr	Phasing	Charge Desc /Charge	Charge F	Reason Misrun
Reservoir (ft)	S (ft)	经收益股份 医格里氏病	ensity Add. Sh	용하면 어린 하면요. 나무하게 하고 열면이 그 얼마가 되었다. 아이들은 하라고 하는데	Size	(°)	Manufacturer	Weight	
42:00AMWACATCIV	(ft)		shot/ft)	(0)	(in)			(gram)	
12:00AMWASATCH/	6,477.0	6,479.0	4.00	0.360 EXP/	3.375	90.00		23.00 PRC	DDUCTIO
	<u> </u>		į.	Í	E-)	1		N	

### 2.1 Perforated Interval (Continued)

Date	Formation/ Reservoir	CCL@ (ft)	CCL-T S (ft)	MD Top (ft)		Density (shot/ft)	Misfires/ Add. Shot	r (in)	Carr Type /Carr Manuf	Carr Size (in)	Phasing (°)	Charge Desc /Charge Manufacturer	Charge Weight (gram)	Reason	Misrun
12:00AM	WASATCH/	- Andrew		6,521.0	6,522.0	4.00		0.360	EXP/	3.375	90.00		23.00	PRODUCTIO	
12:00AM	WASATCH/			6,566.0	6,569.0	4.00	and the state of the state of	0.360	EXP/	3.375	90.00		23.00	PRODUCTIO	* ** * · · · · · · · · · · ·
12:00AM	WASATCH/			7,250.0	7,253.0	4.00	Mark Control (22 or )	0.360	EXP/	3.375	90.00	an artistic in the contact of the co	23.00	N PRODUCTIO	
12:00AM	WASATCH/			7,276.0	7,279.0	4.00		0.360	EXP/	3.375	90.00		23.00	N PRODUCTIO	
12:00AM	MESAVERDE/		a consequence	7,604.0	7,606.0	4.00	ene de la <del>e</del> ne esta esta esta esta esta esta esta est	0.360	EXP/	3.375	90.00	and a second of the second of	23.00	N PRODUCTIO	The second second
12:00AM	MESAVERDE/			7,632.0	7,634.0	4.00		0.360	EXP/	3.375	90.00		23.00	N PRODUCTIO	
12:00AM	MESAVERDE/	· · · · · · · · · · · · · · · · · · ·		7,660.0	7,662.0	4.00		0.360	EXP/	3.375	90.00	amenia, minasan si sassi	23.00	PRODUCTIO	90
12:00AM	MESAVERDE/		\$ 	7,832.0	7,834.0	3.00	and the second of the second of	0.360	EXP/	3.375	120.00		23.00	N PRODUCTIO	
12:00AM	MESAVERDE/		.}	7,855.0	7,857.0	3.00	ar recal success of	0.360	EXP/	3.375	120.00		23.00	N PRODUCTIO	1 to 10 to 1
12:00AM	MESAVERDE/	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		7,891.0	7,892.0	3.00	Anna Carlos Carlos	0.360	EXP/	3.375	120.00			N PRODUCTIO	
12:00AM	MESAVERDE/	1 1 4 2 200 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1	7,922.0	7,924.0	4.00	over a service of a service of	0.360	EXP/	3.375	90.00	ra ku yasan ka a sana sa	lan and a second of the	N PRODUCTIO	The state of the s
12:00AM	MESAVERDE/			7,984.0	7,986.0	4.00	e were erware in the e	0.360	EXP/	3.375	90.00	ing the second control of the second control	23.00	PRODUCTIO	
12:00AM	MESAVERDE/			8,004.0	8,006.0	4.00	MARININE NO. 1884 PARTY	0.360	EXP/	3.375	90.00		23.00	PRODUCTIO	
12:00AM	MESAVERDE/			8,030.0	8,031.0	4.00	· · · · · · · · · · · · · · · · · · ·	0.360	EXP/	3.375	90.00		23.00	PRODUCTIO	
12:00AM	MESAVERDE/	The state of the s		8,052.0	8,053.0	4.00	e in the winds of his	0.360	EXP/	3.375	90.00		23.00	PRODUCTIO	***************************************
12:00AM	MESAVERDE/		2004	8,100.0	8,102.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO	
12:00AM	MESAVERDE/			8,146.0	8,147.0	4.00		0.360	EXP/	3.375	90.00		23.00	PRODUCTIO	20.2200 00.0
12:00AM	MESAVERDE/			8,174.0	8,176.0	3.00		0.360	EXP/	3.375	120.00			PRODUCTIO	
12:00AM	MESAVERDE/			8,259.0	8,260.0	4.00		0.360	EXP/	3.375	90.00			PRODUCTIO	
12:00AM	MESAVERDE/			8,302.0	8,303.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO	
12:00AM	MESAVERDE/			8,408.0	8,410.0	3.00	per one in the control of the contro	0.360	EXP/	3.375	120.00			PRODUCTIO N	

### 2.1 Perforated Interval (Continued)

Date	Formation/ Reservoir	CCL@	CCL-T MD T	op MD Base (ft)	Shot Density		iamete r	Carr Type /Carr Manuf	Carr Size	Phasing (°)	Charge Desc /Charge Manufacturer	Charge Weight	Reason	Misrun
		(67)	(ft)		(shot/ft)	AGU ONOL	(in)		(in)		Mailuiaciuiel	(gram)		
12:00AM	MESAVERDE/	11 11	8,461	.0 8,463.0	3.00	4	0.360	EXP/	3.375	120.00			PRODUCTIO N	
12:00AM	MESAVERDE/		8,505	.0 8,507.0	3.00		0.360	EXP/	3.375	120.00	Colonia (Colonia) (Colonia) (Colonia (C	-	PRODUCTIO N	
12:00AM	MESAVERDE/		8,518	.0 8,520.0	3.00		0.360	EXP/	3.375	120.00	and the first control of the second of the s	23.00	PRODUCTIO N	
12:00AM	MESAVERDE/		8,572	.0 8,574.0	4.00		0.360	EXP/	3.375	90.00	and the second of the second o	23.00	PRODUCTIO N	1
12:00AM	MESAVERDE/		8,642	.0 8,644.0	4.00		0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
12:00AM	MESAVERDE/		8,704	.0 8,705.0	4.00		0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
12:00AM	MESAVERDE/		8,746	.0 8,747.0	4.00		0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	The second secon
12:00AM	MESAVERDE/		8,872	.0 8,874.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
	MESAVERDE/	and a second of	8,956	.0 8,958.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
12:00AM	MESAVERDE/		8,989	.0 8,991.0	4.00	and spanish have	0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
12:00AM	MESAVERDE/		9,007	.0 9,008.0	4.00	1	0.360		3.375	90.00		23.00	PRODUCTIO N	
	MESAVERDE/		9,052	.0 9,053.0	3.00		0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
	MESAVERDE/	To an	9,066		i Anno de i	The second of th	0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
12:00AM	MESAVERDE/		9,082	.0 9,083.0	3.00	V 24 Configuration of the	0.360	EXP/	3.375	120.00			PRODUCTIO N	- 0
	MESAVERDE/		9,140				0.360	EXP/	3.375	120.00		23.00	PRODUCTIO N	
	MESAVERDE/		9,192	.0 9,193.0	4.00		0.360		3.375	90.00	The second secon	j	PRODUCTIO N	
	MESAVERDE/		9,294	.0 9,295.0	4.00	A Section 1	0.360	EXP/	3.375	90.00		23.00	PRODUCTIO N	
1	MESAVERDE/		9,351	.0 9,352.0	4.00		0.360		3.375	90.00		23.00	PRODUCTIO N	
The second secon	MESAVERDE/	and the second	9,402	.0 9,403.0	4.00	*	0.360	EXP/	3.375	90.00			PRODUCTIO N	
12:00AM	MESAVERDE/		9,604	.0 9,608.0	4.00		0.360	EXP/	3.375	90.00			PRODUCTIO N	

### 3 Plots

### 3.1 Wellbore Schematic



			C			KIES RE	EGION ary Report
Well: NBU 921	-25G2AS [RED]		Spud C	onductor	2/18/20	11	Spud Date: 2/27/2011
Project: UTAH-	UINTAH	i		3U 921-2			Rig Name No: GWS 1/1
Event; COMPL	ETION		Start Da	ate: 7/5/20	011		End Date: 7/25/2011
Active Datum: Level)	RKB @4,928.00ft (a	above Mean	Sea	UWI: S	E/NE/0/9	9/S/21/E/2	25/0/0/26/PM/N/1484/E/0/763/0/0
Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From Operation (ft)
7/1/2011	7:00 - 15:00	8.00	COMP	47	В	Р	HSM, WORKING AROUND PRESSURE. N/D WELL HEAD, N/U FRAC VALVES, MIRU B&C TESTERS PRESSURE TEST TO 1000# W/ 15# LOSS IN 15 MIN, BUMP UP TO 3500# W/ 34# LOSS IN 15 MIN, BUMP UP TO 7000# W/ 93# LOSS IN 30 MIN. BUMP BACK UP TO 7000# W/ 50# LOSS IN 30 MIN, [GOOD TEST]
7/5/2011	12:00 - 15:00	3.00	COMP	37	В	P	MIRU CUTTERS WIRELINE, 1ST SHOOT MESAVERDE USING 3-1/8 EXPEND, 23GRM, 0,36" HOLE. AS PERSAY IN PROCEDURE.
7/6/2011	7:00 - 13:30	6.50	COMP	46	E	Р	MIRU SUPERIOR FRAC EQUIP, HSM, R/U-OVER HEAD LOADS
	13:30 - 18:00	4.50	COMP	36		P	FRAC STG #1] WHP=1,857#, BRK DN PERFS=3,947#, @=4.7 BPM, INJ RT=41.4, INJ PSI=5,647#, ISIP=3,168#, FG=.77, PUMP'D 772 BBLS SLK WTR W/ 8,091# 30/50 MESH W/ 2,488# RESIN COAT IN TAIL W/ 10,579# TOTAL PROP PUMP'D, ISIP=2,917#, FG=.75, AR=45.1, AP=5,920#, MR=49.2, MP=6,582#, NPI=-251#, 20/24 CALC PERFS OPEN 85%. X OVER TO WIRE LINE
							PERF STG #2] P/U RIH W/ HALIBURTON 8K CBP & PERF GUN, SET CBP @=9,325', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36' HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW  FRAC STG #2] WHP=1,252#, BRK DN
							PERFS=5,422#, @=4.7 BPM, INJ RT=43.5, INJ PSI=5,823#, ISIP=4,424#, FG=92, PUMP'D 1,208 BBLS SLK WTR W/ 23,073# 30/50 MESH W/ 2,515# RESIN COAT IN TAIL W/ 25,588# TOTAL PROP PUMP'D, ISIP=#, FG=.75, AR=49.3, AP=5,383#, MR=51.8, MP=6,407#, NPI=-1,544#, 23/23 CALC PERFS OPEN 100%. X OVER TO WIRE LINE

Ρ

8/15/2011

7/7/2011

6:45 - 7:00

0.25

COMP

48

PERF STG #3] P/U RIH W/ HALIBURTON 8K CBP &

PERF GUN, SET CBP @=9,038', PERF
MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36"
HOLE. AS PERSAY IN PROCEDURE, X OVER TO
FRAC CREW. SWIFN.

HSM, STAYING AWAY FROM PRESSURED LINES

Well: NBU 921-	25G2AS [RED]		Spud C	onductor	r: 2/18/20	)11 S	pud Date: 2/	27/2011		
Project: UTAH-	UINTAH		Site: NE	3U 921-2	5H PAD		·····	Rig Name No: GWS 1/1		
Event: COMPL	ETION		Start Da	ate: 7/5/2	2011			End Date: 7/25/2011		
Active Datum: F _evel)	RKB @4,928.00ft (a	above Mean	Sea	UWI: S	SE/NE/0/	9/S/21/E/25	/0/0/26/PM/N	1/1484/E/0/763/0/0		
Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation		
	7:00 - 15:00	8.00	COMP	36	E	Р		FRAC STG #3] WHP=1,582#, BRK DN PERFS=4,473#, @=4.7 BPM, INJ RT=46.1, INJ PSI=5,619#, ISIP=3,515#, FG=83, PUMP'D 812 BBLS SLK WTR W/ 13,205# 30/50 MESH W/ 2,414# RESIN COAT IN TAIL W/ 15,619# TOTAL PROP PUMP'D, ISIP=2,631#, FG=.73, AR=48.8, AP=5,639#, MR=49.8, MP=6,547#, NPI=-881#, 24/24 CALC PERFS OPEN 100%. X OVER TO WIRE LINE		
								PERF STG #4] P/U RIH W/ HALIBURTON 8K CBP & PERF GUN, SET CBP @=8.777', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36' HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW		
								FRAC STG #4] WHP=2,038#, BRK DN PERFS=5,459#, @=4.9 BPM, INJ RT=35.6, INJ PSI=5,984#, ISIP=4,289#, FG=93, PUMP'D 874 BBLS SLK WTR W/ 14,719# 30/50 MESH W/ 2,503# RESIN COAT IN TAIL W/ 17.222# TOTAL PROP PUMP'D, ISIP=2,621#, FG=.74, AR=44.7, AP=5,605#, MR=49.8, MP=6,084#, NPI=-1,668#, 22/24 CALC PERFS OPEN 92%. X OVER TO WIRE LINE		
								PERF STG #5] P/U RIH W/ HALIBURTON 8K CBP & PERF GUN, SET CBP @=8,550', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36' HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW.		
								FRAC STG #5] WHP=2,050#, BRK DN PERFS=4,063#, @=4.6 BPM, INJ RT=49.8, INJ PSI=5,807#, ISIP=2,742#, FG=.76, PUMP'D 755 BBLS SLK WTR W/ 12,045# 30/50 MESH W/ 2,468# RESIN COAT IN TAIL W/ 14,513# TOTAL PROP PUMP'D, ISIP=2,772#, FG=.77, AR=49, AP=5,472#, MR=51.3, MP=6,489#, NPI=30#, 21/24 CALC PERFS OPEN 89%. X OVER TO WIRE LINE		
7/8/2011	6:45 - 7:00	0.25	COMP	48		P		PERF STG #6] P/U RIH W/ HALIBURTON 8K CBP 8 PERF GUN, SET CBP @=8,333', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.36 HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW. SWIFN HSM, WORKING AROUND WIRE LINE		

8/15/2011 2:35:17PM

### **Operation Summary Report**

vell. NDU 92	1-25G2AS [RED]		Spud C	onductor	: 2/18/20	111	Spud Date: 2/27/2011
Project: UTAH	I-UINTAH		Site: NE	SU 921-2	5H PAD		Rig Name No: GWS 1/1
Event: COMPI	LETION		Start Da	ite: 7/5/2	011		End Date: 7/25/2011
Active Datum: .evel)	RKB @4,928.00ft (	above Mean	Sea	UWI: S	E/NE/0/9	9/S/21/E/	/25/0/0/26/PM/N/1484/E/0/763/0/0
Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From Operation (ft)
	7:00 - 17:00	10.00	COMP	36	E	Р	FRAC STG #6] WHP=1,512#, BRK DN PERFS=3,153#, @=4.4 BPM, INJ RT=49, INJ PSI=5,979#, ISIP=1,863#, FG=.67, PUMP'D 1,050 BBLS SLK WTR W/ 19,226# 30/50 MESH W/ 2,52 RESIN COAT IN TAIL W/ 21,748# TOTAL PROP PUMP'D, ISIP=2,307#, FG=.72, AR=47.6, AP=5,255#, MR=49.6, MP=6,559#, NPI=444# 16/2 CALC PERFS OPEN 70%. X OVER TO WIRE LINI PERF STG #7] P/U RIH W/ HALIBURTON 8K CBF
							PERF GUN, SET CBP @=8,083', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.0 HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW
							FRAC STG #7] WHP=1,983#, BRK DN PERFS=5,166#, @=4.6 BPM, INJ RT=51.1, INJ PSI=5,589#, ISIP=3,018#, FG=.82, PUMP'D 980 BBLS SLK WTR W/ 17,260# 30/50 MESH W/ 2,51 RESIN COAT IN TAIL W/ 19,777# TOTAL PROP PUMP'D, ISIP=2,457#, FG=.75, AR=50.6, AP=5,465#, MR=51.8, MP=6,554#, NPI=-561#, 24/24 CALC PERFS OPEN 100%. X OVER TO WIRE LINE
							PERF STG #8] P/U RIH W/ HALIBURTON 8K CBP PERF GUN, SET CBP @=7,954', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.3 HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW
							FRAC STG #8] WHP=1,986#, BRK DN PERFS=3,666#, @=4.8 BPM, INJ RT=51.7, INJ PSI=5,480#, ISIP=2,668#, FG=.78, PUMP'D 810 BBLS SLK WTR W/ 13,791# 30/50 MESH W/ 2,36 RESIN COAT IN TAIL W/ 16,159# TOTAL PROP PUMP'D, ISIP=2,449#, FG=.75, AR=50.6, AP=5,465#, MR=51.8, MP=6,373#, NPI=-219#, CALC PERFS OPEN 100%. X OVER TO WIRE LINE.
7/9/2011	6:45 - 7:00	0.25	COMP	48		P	PERF STG #9] P/U RIH W/ HALIBURTON 8K CBP PERF GUN, SET CBP @=7,692', PERF MESAVERDE USING 3-1/8 EXPEND, 23 GRM, 0.3 HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW. SWIFN. HSM, FRACING

8/15/2011 2:35:17PM

Vell: NBU 92	1-25G2AS [RED]		Spud Co	onductor	: 2/18/20	11	Spud Date: 2	/27/2011
roject: UTAF	I-UINTAH		Site: NB	U 921-2	5H PAD	•		Rig Name No: GWS 1/1
vent: COMP	LETION		Start Da	ite: 7/5/2	011			End Date: 7/25/2011
ctive Datum: evel)	RKB @4,928.00ft (a	above Mean	Sea	UWI: S	E/NE/0/9	9/S/21/E/2	5/0/0/26/PM/N	N/1484/E/0/763/0/0
Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From (ft)	Operation
	7:00 - 16:00	9.00	COMP	36	E	Р		FRAC STG #9] WHP=815#, BRK DN PERFS=2,616#, @=4.5 BPM, INJ RT=50.9, INJ PSI=4,383#, ISIP=1,365#, FG=.62, PUMP'D 2,368 BBLS SLK WTR W/ 94,198 # 30/50 MESH W/ 2,430 RESIN COAT IN TAIL W/ 96,628# TOTAL PROP PUMP'D, ISIP=2,505#, FG=.77, AR=50.8, AP=4,592#, MR=51.9, MP=6,053#, NPI=1,140# 21/24 CALC PERFS OPEN 89%. X OVER TO WIRE LINE
								PERF STG #10] P/U RIH W/ HALIBURTON 8K CBP & PERF GUN, SET CBP @=7,309', PERF WASATCH USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW
								FRAC STG #10] WHP=633#, BRK DN PERFS=2,534#, @=4.4 BPM, INJ RT=50.6, INJ PSI=5,252#, ISIP=803#, FG=.55, PUMP'D 601 BBLS SLK WTR W/ 11,832# 30/50 MESH W/ 2,429# RESIN COAT IN TAIL W/ 14,261# TOTAL PROP PUMP'D, ISIP=2,269#, FG=.75, AR=49.8, AP=5,339#, MR=51.4, MP=5,827#, NPI=1,466#, 16/24 CALC PERFS OPEN 65%. X OVER TO WIRE LINE
								PERF STG 11] P/U RIH W/ HALIBURTON 8K CBP 8 PERF GUN, SET CBP @=7,200', PERF WASATCH USING 3-1/8 EXPEND, 23 GRM, 0.36" HOLE. AS PERSAY IN PROCEDURE, X OVER TO FRAC CREW
								FRAC STG #11] WHP=365#, BRK DN PERFS=2,353#, @=4.6 BPM, INJ RT=51.2, INJ PSI=5,028#, ISIP=1,792#, FG=.71, PUMP'D 590 BBLS SLK WTR W/ 12,443# 30/50 MESH W/ 2,244 RESIN COAT IN TAIL W/ 14,687# TOTAL PROP PUMP'D, ISIP=1,549#, FG=68., AR=50.4, AP=3,890#, MR=51.8, MP=5,210#, NPI=-243#, 19/24 CALC PERFS OPEN 81%.
								P/U RIH W/ HALIBURTON 8K CBP SET FOR TOP KILL @=6,427', RDMO
								10,820 TOTAL BBLS 266,781# TOTAL SAND 1,111 GALS SCALE INHIB. 202 GALS BIOCIDE
7/21/2011	12:00 - 18:00	6.00	COMP	31	1	P		MIRU, SPOT EQUIP, ND WH, NU BOP, RU FLOOR & TBG EQUIP, PU 3 7/8" BIT, POBS, XN SN, TALL' & PU TBG FOR D/O IN AM, SWI, SDFN.
7/22/2011	6:30 - 6:45	0.25	COMP	48		Р		HSM, SLIPS, TRIPS & FALLS, STRIPPING IN HANGER.

8/15/2011 2:35:17PM

### **Operation Summary Report**

Well: NBU 921-25G2AS [RED]	Spud C	Conductor: 2/18/2011 Spud Da	te: 2/27/2011
Project: UTAH-UINTAH	Site: NE	BU 921-25H PAD	Rig Name No: GWS 1/1
Event: COMPLETION	Start Da	ate: 7/5/2011	End Date: 7/25/2011
Active Datum: RKB @4,928.00ft (above Mean Level)	n Sea	UWI: SE/NE/0/9/S/21/E/25/0/0/26/	PM/N/1484/E/0/763/0/0
Date Time Duration Start-End (hr)	Phase	Code Sub P/U MD Fro	om Operation
6:45 - 16:30 9.75	COMP	44 C P	RU POWER SWIVEL, FILL TBG, BREAK CIRC, PRESS TEST BOP TO 3,000 PSI FOR 15 MIN, LOST 0 PSI, START DRLG PLUGS, SURFACE VALVE OPEN & LOCKED.
			C/O 0' SAND, TAG 1ST PLUG @ 6,451' DRL PLUG IN 7 MIN. 0 PSI INCREASE RIH, CSG PRESS 0 PSI. NO FLOW.
			C/O 30' SAND, TAG 2ND PLUG @ 6,600' DRL PLUG IN 9 MIN. 0 PSI INCREASE RIH, CSG PRESS 0 PSI. NO FLOW.
			C/O 60' SAND, TAG 3RD PLUG @ 7,310' DRL PLUG IN 8 MIN. 300 PSI INCREASE RIH, CSG PRESS 50 PSI. GOOD FLOW.
			C/O 30' SAND, TAG 4TH PLUG @ 7,694' DRL PLUG IN 9 MIN. 250 PSI INCREASE RIH, CSG PRESS 100 PSI.
			C/O 30' SAND, TAG 5TH PLUG @ 7,954' DRL PLUG IN 8 MIN. 300 PSI INCREASE RIH, CSG PRESS 150 PSI.
			C/O 25' SAND, TAG 6TH PLUG @ 8,083' DRL PLUG IN 10 MIN. 200 PSI INCREASE RIH, CSG PRESS 150 PSI.
			C/O 50' SAND, TAG 7TH PLUG @ 8,332' DRL PLUG IN 8 MIN. 200 PSI INCREASE RIH, CSG PRESS 200 PSI.
			C/O 25' SAND, TAG 8TH PLUG @ 8,550' DRL PLUG IN 10 MIN. 200 PSI INCREASE RIH, CSG PRESS 200 PSI.
			C/O 30' SAND, TAG 9TH PLUG @ 8,785' DRL PLUG IN 11 MIN. 200 PSI INCREASE RIH, CSG PRESS 350 PSI.
			C/O 35' SAND, TAG 10TH PLUG @ 9,038' DRL PLUG IN 9 MIN. 400 PSI INCREASE RIH, CSG PRESS 450 PSI.
			C/O 55' SAND, TAG 11TH PLUG @ 9,330' DRL PLUG IN 10 MIN. 200 PSI INCREASE RIH, CSG PRESS 400 PSI. FLOW LINE PLUGGED.
			PBTD @ 9,762', BTM PERF @ 9,608', RIH TAGGED @ 9,711', 103' PAST BTM PERF W/ 306 JTS 2 3/8" L-80 TBG, LD 22 JTS, PU & STRIP IN TBG HANGER & LAND TBG W/ 284 JTS 2 3/8" L-80, EOT 9,011.12'. SMASHED 1 JT TBG W/ BLIND RAMS.
			RD POWER SWIVEL, FLOOR & TBG EQUIP, ND BOPS, NU WH, DROP BALL TO SHEAR OFF BIT, PUMPED 50 BBLS, NO FLOW UP TBG, CALLED SLICKLINE TRUCK TO SEE IF BIT WAS GONE, TBG OBSTRUCTION @ 221', RIH W/ MAGNET PULLED BALL, LET WELL SELL UP CSG OVER WEEKEND, WILL POOH TO TBG OBSTRUCTION ON MONDAY.
			TURN OVER TO FLOW BACK CREW, SDFWE.

Well: NBU 921	-25G2AS [RED]		Spud C	onductor	: 2/18/20	11	Spud Date: 2/27/2011
Project: UTAH	-UINTAH		Site: NE	SU 921-2	5H PAD		Rig Name No: GWS 1/1
Event: COMPL	ETION		Start Da	ite: 7/5/2	011		End Date: 7/25/2011
Active Datum: Level)	RKB @4,928.00ft	(above Mean	Sea	UWI: S	E/NE/0/9	9/S/21/E/2	25/0/0/26/PM/N/1484/E/0/763/0/0
Date	Time Start-End	Duration (hr)	Phase	Code	Sub Code	P/U	MD From Operation (ft)
						`	KB= 14' 4 1/16" WEATHERFORD HANGER= .83' TBG DELIVERED 315 JTS 284 JTS 2 3/8" L-80 = 8,994.09' USED 285 JTS // (1JT SMASHED) POBS= 2.20' TBG RETURNED 30 JTS EOT @ 9,011.12'  TWTR= 10,820 BBLS TWR= 1,600 BBLS TWLTR= 9,220 BBLS CALLED CDC TALKED
	17:30 - 17:30	0.00	PROD	50			TO RYAN WELL TURNED TO SALES @ 1730 HR ON 7/22/11 - 3400 MCFD, 720 BWPD, CP 2000#, FTP 0#, CK
7/23/2011	7:00 -			33	Α		20/64" 7 AM FLBK REPORT: CP 2075#, TP -#, 18/64" CK, 40 BWPH, light SAND, - GAS TTL BBLS RECOVERED: 2155 BBLS LEFT TO RECOVER: 8665
7/24/2011	7:00 -			33	Α		7 AM FLBK REPORT: CP 1950#, TP NA#, 18/64" CK, 30 BWPH, LIGHT SAND, - GAS TTL BBLS RECOVERED: 2920 BBLS LEFT TO RECOVER: 7900
7/25/2011	7:00 -			33	Α		7 AM FLBK REPORT: CP 1675#, TP NA#, 26/64" CK, 30 BWPH, LIGHT SAND, - GAS TTL BBLS RECOVERED: 3640 BBLS LEFT TO RECOVER: 7180
	7:00 - 7:15	0.25	COMP	48		Р	HSM, SLIPS, TRIPS & FALLS, BLEEDING PRESS OFF WELL
	7:15 - 12:00	4.75	COMP	31	1	P	CSG PRESS 1,700 PSI, RU TO POOH W/ TBG, HOOK UP FLOW LINE TO PIT TO BLOW CSG DOWN, ND WH, NU BOP, RU FLOOR & TBG EQUIP, UNLAND & STRIP OUT TBG HANGER, POOH LOOKING FOR TBG OBSTRUCTION, 7TH JT OF TBG SMASHED L/D, RIH PU & STRIP IN TBG HANGER & LAND TBG W/ 284 JTS 2 3/8" L-80, EOT 9,011.12'.
							RD POWER SWIVEL, FLOOR & TBG EQUIP, ND BOPS, NU WH, DROP BALL TO SHEAR OFF BIT W/ 2,000 PSI, LET BIT FALL FOR 20 MIN.
							TURN WELL BACK OVER TO FLOW BACK CREW, RD & MOVE TO CIGE 142.
7/26/2014	7:00 -			20	۸		KB= 14' 4 1/16" WEATHERFORD HANGER= .83' 284 JTS 2 3/8" L-80 = 8,994.09' POBS= 2.20' EOT @ 9,011.12'
7/26/2011				33	А		7 AM FLBK REPORT: CP 2450#, TP 1700#, 20/64" CK, 35 BWPH, LIGHT SAND, - GAS TTL BBLS RECOVERED: 4825 BBLS LEFT TO RECOVER: 5995
7/27/2011	7:00 -			33	Α		7 AM FLBK REPORT: CP 2400#, TP 1650#, 20/64" CK, 30 BWPH, LIGHT SAND, - GAS TTL BBLS RECOVERED: 5570 BBLS LEFT TO RECOVER: 5250

8/15/2011 2:35:17PM



Site: NBU 921-25H Pad

Well: NBU 921-25G2AS

Wellbore: OH Design: OH

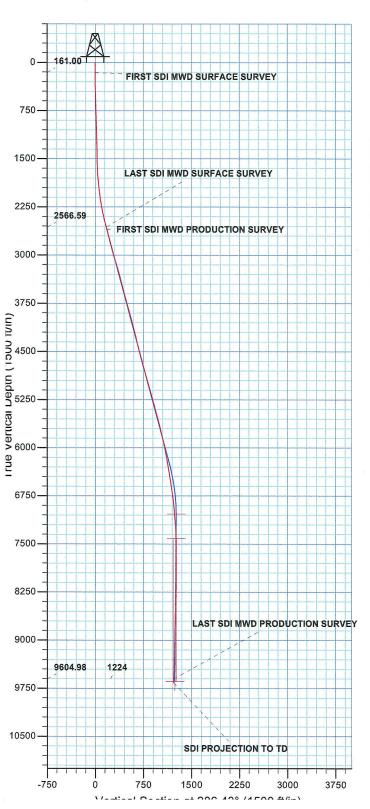


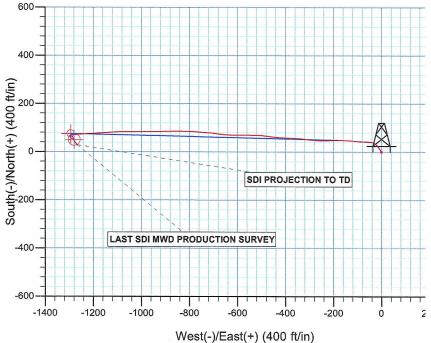
WELL DETAILS: NBU 921-25G2AS GL 4914' & RKB 14' @ 4928.00ft (ENSIGN 139) Longitude 109° 29' 33.727 W Easting 2062493.70 0.00 40° 0' 36.731 N 14533329.51



Azimuths to True North Magnetic North: 11.11°

Magnetic Field Strength: 52366.8snT Dip Angle: 65.89° Date: 02/22/2011 Model: IGRF2010





### PROJECT DETAILS: Uintah County, UT UTM12

Geodetic System: Universal Transverse Mercator (US Survey Feet)
Datum: NAD 1927 - Western US
Ellipsold: Clarke 1866
Zone: Zone 12N (114 W to 108 W)
Location: SEC 25 T9S R21E

System Datum: Mean Sea Level

Design: OH (NBU 921-25G2AS/OH)

Created Din DahadCast Date: 42:27 May 00 2044





Company:

Kerr McGee Oil and Gas Onshore LP

Project:

Uintah County, UT UTM12

Site: Well: NBU 921-25H Pad

Wellbore:

NBU 921-25G2AS

Design:

OH ОН Local Co-ordinate Reference:

**TVD Reference:** 

MD Reference: North Reference: GL 4914' & RKB 14' @ 4928.00ft (ENSIGN 139) GL 4914' & RKB 14' @ 4928.00ft (ENSIGN 139)

**Survey Calculation Method:** 

Database:

Minimum Curvature

EDM5000-RobertS-Local

Well NBU 921-25G2AS

**Project** 

Uintah County, UT UTM12

Map System:

Universal Transverse Mercator (US Survey Feet)

System Datum:

Geo Datum: Map Zone:

NAD 1927 - Western US

Zone 12N (114 W to 108 W)

Mean Sea Level

Site

NBU 921-25H Pad, SEC 25 T9S R21E

Site Position:

Northing:

14,533,311.91 usft

Latitude:

40° 0' 36.551 N

From: **Position Uncertainty:**  Lat/Long

Easting:

2.062.529.85 usft

Longitude:

109° 29' 33.266 W

0.97°

0.00 ft

Slot Radius:

13,200 in

**Grid Convergence:** 

Well

NBU 921-25G2AS, 1484' FNL 763' FEL

**Well Position** 

+N/-S

0.00 ft

Northing:

14,533,329.51 usft

Latitude:

40° 0' 36.731 N

+E/-W **Position Uncertainty** 

0.00 ft 0.00 ft Easting: Wellhead Elevation: 2,062,493.70 usft

ft

Longitude: **Ground Level:**  109° 29' 33.727 W

4,914.00 ft

Wellbore

ОН

**Magnetics** 

**Model Name** 

Sample Date

Declination (°)

Dip Angle (°)

Field Strength

(nT)

IGRF2010

02/22/2011

11.11

65.89

52,367

Design

OH

**Audit Notes:** 

Version:

1.0

Phase:

ACTUAL

Tie On Depth:

0.00

0.00

+N/-S

+E/-W

Direction

**Vertical Section:** 

Depth From (TVD) (ft)

0.00

(ft)

0.00

(ft)

(°)

286.43

Survey Program

05/09/2011 Date

From (ft)

To

(ft)

Survey (Wellbore)

**Tool Name** 

Description

10.00 2,612.00 2,580.00 Survey #1 SDI MWD SURFACE (OH) 9,820.00 Survey #2 SDI MWD PRODUCTION (OH) MWD SDI MWD SDI MWD - Standard ver 1,0,1 MWD - Standard ver 1.0.1

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
								, ,	, ,
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10.00	0.00	0.00	10.00	0.00	0.00	0.00	0.00	0.00	0.00
161.00	0.44	94.92	161.00	-0.05	0.58	-0.57	0.29	0.29	0.00
FIRST SDI N	IWD SURFACE S	SURVEY							
246.00	0.72	327.56	246.00	0.37	0.62	-0.49	1.23	0.33	-149.84
331.00	1.33	327.34	330.98	1.65	-0.20	0.66	0.72	0.72	-0.26
420.00	2.01	324.98	419.94	3.80	-1.66	2.66	0.77	0.76	-2.65
510.00	2.09	325.96	509.89	6.45	-3.48	5.16	0.10	0.09	1.09
600.00	2.32	323.18	599.82	9.27	-5.49	7.89	0.28	0.26	-3.09
690.00	2.30	323.20	689.75	12.18	-7.66	10.80	0.02	-0.02	0.02





Company:

Kerr McGee Oil and Gas Onshore LP

Project:

Uintah County, UT UTM12

Site:

NBU 921-25H Pad

Well:

NBU 921-25G2AS

Wellbore: Design:

ОН ОН Local Co-ordinate Reference:

TVD Reference:

MD Reference:

North Reference:

**Survey Calculation Method:** 

Database:

Weil NBU 921-25G2AS

GL 4914' & RKB 14' @ 4928.00ft (ENSIGN 139)

GL 4914' & RKB 14' @ 4928.00ft (ENSIGN 139)

Minimum Curvature

		Database:				EDM3000-Roberts-Local					
Management											
Measured Depth (ft)	inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100 <del>ft</del> )	Build Rate (°/100ft)	Turn Rate (°/100ft)		
780.00	1.89	332.92	779.69	14.94	-9.42	13.26	0.60	-0.46	10.80		
870.00	1.57	331.22	869.65	17.35	-10.69	15.16	0.36	-0.36	-1.89		
960.00	1.79	316.99	959.61	19.46	-12.24	17.25	0.52	0.24	-15.81		
1,050.00	2.03	315.41	1,049.56	21.62	-14.32	19.85	0.27	0.27	-1.76		
1,140.00	1.82	319.53	1,139.51	23.84	-16.37	22.44	0.28	-0.23	4.58		
1,230.00	1.72	322.70	1,229.46	26.00	-18.11	24.73	0.16	-0.11	3.52		
1,320.00	1.54	324.20	1,319.43	28.06	-19.64	26.77	0.21	-0.20	1.67		
1,410.00	1.45	318.23	1,409.40	29.89	-21.11	28.70	0.20	-0.10	-6.63		
1,500.00	1.04	305.24	1,499.37	31.21	-22.53	30.44	0.55	-0.46	-14.43		
1,590.00	2.06	316.18	1,589.34	32.85	-24.32	32.62	1.17	1.13	12.16		
1,680.00	3.53	309.01	1,679.23	35.76	-27.59	36.58	1.68	1.63	-7.97		
1,770.00	4.18	292.39	1,769.03	38.75	-32.78	42.40	1.43	0.72	-18.47		
1,860.00	4.98	276.83	1,858.75	40.47	-39.69	49.51	1.63	0.89	-17.29		
1,950.00	6.80	275.48	1,948.27	41.44	-48.87	58.60	2.03	2.02	-1.50		
2,040.00	7.84	273.55	2,037.53	42.33	-60.30	69.81	1.19	1.16	-2.14		
2,130.00	8.41	270.69	2,126.63	42.79	-73.01	82.13	0.78	0.63	-3.18		
2,220.00	9.33	272.86	2,215.55	43.23	-86.88	95.56	1.09	1.02	2.41		
2,310.00	10.77	275.25	2,304.17	44.36	-102.54	110.90	1.67	1.60	2.66		
2,400.00	13.07	275.25	2,392.22	46.06	-121.05	129.14	2.56	2.56	0.00		
2,490.00	14.44	273.66	2,479.64	47.71	-142.38	150.06	1.58	1.52	-1.77		
2,580.00	15.47 IWD SURFACE S	271.90	2,566.59	48.83	-165.58	172.63	1.25	1.14	-1.96		
2,612.00	15.88	271.55	2,597.40	49.09	-174.22	180.99	1.31	1.28	-1.09		
	MWD PRODUCTION										
2,702.00	15.16	267.75	2,684.12	48.96	-198.29	204.04	1.38	-0.80	-4.22		
2,793.00	15.53	267.08	2,771.88	47.87	-222.35	226.81	0.45	0.41	-0.74		
2,883.00	15.81	270.65	2,858.53	47.40	-246.64	249.97	1.12	0.31	3.97		
2,974.00	15.46	274.34	2,946.17	48.45	-271.13	273.76	1.16	-0.38	4.05		
3,065.00	15.91	274.77	3,033.78	50.41	-295.65	297.84	0.51	0.49	0.47		
3,155.00	17.71	277.55	3,119.93	53.23	-321.52	323.45	2.19	2.00	3.09		
3,246.00	16.54	274.50	3,206.90	56.07	-348.15	349.80	1.62	-1.29	-3.35		
3,336.00	15.78	272.73	3,293.34	57.66	-373.15	374.22	1.01	-0.84	-1.97		
3,427.00	15. <del>4</del> 6	271.26	3,380.98	58.51	-397.63	397.95	0.56	-0.35	-1.62		
3,517.00	14.31	273.51	3,467.96	59.46	-420.73	420.37	1.43	-1.28	2.50		
3,608.00	15.07	276.37	3,555.99	61.46	<del>-44</del> 3.71	442.98	1.15	0.84	3.14		
3,698.00	16.32	279.51	3,642.63	64.85	-467.81	467.05	1.68	1.39	3.49		
3,789.00	15.60	273.69	3,730.13	67.75	<del>-4</del> 92.63	491.68	1.93	-0.79	-6.40		
3,879.00	16.51	273.23	3,816.62	69.25	-517.48	515.93	1.02	1.01	-0.51		
3,970.00	15.26	270.27	3,904.14	70.03	-542.37	540.03	1.64	-1.37	-3.25		
4,060.00	14.79	271.17	3,991.06	70.32	-565.70	562.49	0.58	-0.52	1.00		
4,151.00	15.11	269.71	4,078.98	70.50	-589.17	585.05	0.54	0.35	-1.60		
4,242.00	14.92	270.53	4,166.88	70.55	-612.74	607.68	0.31	-0.21	0.90		
4,332.00	13.07	272.44	4,254.20	71.09	-634.50	628.70	2.12	-2.06	2.12		





Company: Project:

Kerr McGee Oil and Gas Onshore LP

Uintah County, UT UTM12

Site: Well: NBU 921-25H Pad NBU 921-25G2AS

Wellbore: Design:

ОН ОН Local Co-ordinate Reference:

**TVD Reference:** 

MD Reference:

North Reference:

**Survey Calculation Method:** 

Database:

Well NBU 921-25G2AS

GL 4914' & RKB 14' @ 4928.00ft (ENSIGN 139)

GL 4914' & RKB 14' @ 4928.00ft (ENSIGN 139)

True

Minimum Curvature

Measured Depth (ft)			Vertical			Vertical	Dogleg	Build	Turn
-	Inclination	Azimuth	Depth	+N/-S	+E/-W	Section	Rate	Rate	Rate
	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(°/100ft)	(°/100ft)	(°/100ft)
4,422.00	13.76	275.23	4,341.75	72.50	-655.32	649.07	1.05	0.77	3.10
4,513.00	14.69	277.95	4,429.96	75.08	-677.53	671.10	1.26	1.02	2.99
4,603.00	14.40	274.01	4,517.07	77.44	-700.00	693.32	1.15	-0.32	-4.38
4,694.00	15.16	278.14	4,605.07	79.92	-723.06	716.14	1.43	0.84	4.54
4,784.00	15.18	273.36	4,691.93	82.27	-746.48	739.27	1.39	0.02	-5.3 <sup>2</sup>
4,874.00	16.72	273.31	4,778.46	83.71	-771.17	763.35	1.71	1.71	-0.06
4,965.00	16.14	271.01	4,865.75	84.69	-796.88	788.30	0.96	-0.64	-2.53
5,055.00	16.64	269.80	4,952.09	84.86	-822.28	812.70	0.67	0.56	-1.34
5,146.00	16.64	270.00	5,039.28	84.82	-848.33	837.68	0.06	0.00	0.22
5,236.00	16.96	270.58	5,125.44	84.95	-874.35	862.67	0.40	0.36	0.64
E 227.00	45.74	200.20	E 040 77	04.05	000.04	007.00	4.40	4.00	
5,327.00 5,418.00	15.71 16.14	269.36	5,212.77	84.95	-899.94	887.22	1.42	-1.37	-1.34
5,418.00	16.14	269.44	5,300.27	84.69	-924.91	911.09	0.47	0.47	0.09
5,508.00	15.16	268.67	5,386.94	84.29	-949.18	934.26	1.11	-1.09	-0.86
5,599.00	15.60	270.63	5,474.68	84.15	-973.31	957.37	0.75	0.48	2.15
5,689.00	14.55	268.57	5,561.58	84.00	-996.71	979.77	1.31	-1.17	-2.29
5,780.00	15.35	270.78	5,649.50	83.88	-1,020.19	1,002.25	1.08	0.88	2.43
5,870.00	14.52	269.72	5,736.46	83.99	-1,043.38	1,024.53	0.97	-0.92	-1.18
5,960.00	13.64	269.41	5,823.75	83.82	-1,065.27	1,045.48	0.98	-0.98	-0.34
6,051.00	13.53	268.66	5,912.21	83.46	-1,086.64	1,065.88	0.23	-0.12	-0.82
6,141.00	12.61	266.34	5,999.88	82.59	-1,106.97	1,085.13	1.18	-1.02	-2.58
6,232.00	11.60	263.75	6,088.85	80.96	-1,125.98	1,102.90	1.26	-1.11	-2.85
6,323.00	11.37	266.66	6,178.03	79.44	-1,144.03	1,119.79	0.68	-0.25	3.20
6,413.00	10.56	264.78	6,266.39	78.17	-1,161.10	1,135.80	0.98	-0.90	-2.09
6,503.00	9.92	267.82	6,354.95	77.13	-1,177.06	1,150.81	0.93	-0.71	3.38
6,594.00	9.31	265.66	6,444.67	76.27	-1,192.23	1,165.12	0.78	-0.67	-2.37
6,684.00	9.12	269.52	6,533.51	75.66	-1,206.63	1,178.75	0.72	-0.21	4.29
6,775.00	8.45	267.24	6,623.45	75.28	-1,220.52	1,191.97	0.83	-0.74	-2.51
6,865.00	7.71	264.45	6,712.55	74.38	-1,233.13	1,203.81	0.93	-0.82	-3,10
6,956.00	7.42	268.32	6,802.76	73.62	-1,245.08	1,215.06	0.64	-0.32	4.25
7,047.00	6.38	267.05	6,893.10	73.18	-1,256.00	1,225.41	1.16	-1.14	-1.40
7,137.00	5.75	265.67	6,982.60	72.59	-1,265.49	1,234.35	0.72	-0.70	-1.53
7,227.00	4.90	265.39	7,072.21	71.94	-1,273.82	1,242.15	0.72	-0.74	-0.31
7,318.00	4.21	271.18	7,162.92	71.69	-1,281.03	1,249.00	0.91	-0. <del>34</del> -0.76	6.36
7,409.00	2.74	258.55	7,102.32	71.33	-1,286.50	1,249.00	1.81	-0.76 -1.62	-13.88
7,499.00	1.72	243.39	7,343.68	70.30	-1,289.82	1,257.03	1.30	-1.02	-16.84
7 500 00									
7,590.00	1.21	232.40	7,434.65	69.10	-1,291.80	1,258.60	0.64	-0.56	-12.08
7,680.00	0.88	246.19	7,524.64	68.24	-1,293.19	1,259.68	0.46	-0.37	15.32
7,771.00	0.91	223.27	7,615.63	67.43	-1,294.32	1,260.54	0.39	0.03	-25.19
7,861.00	0.50	189.78	7,705.62	66.53	-1,294.88	1,260.82	0.63	-0.46	-37.21
7,952.00	0.60	166.96	7,796.62	65.67	-1,294.84	1,260.54	0.26	0.11	-25.08
8,042.00	0.70	169.35	7,886.61	64.67	-1,294.63	1,260.06	0.12	0.11	2.66
8,133.00	1.02	170.10	7,977.60	63.33	-1,294.39	1,259.44	0.35	0.35	0.82
8,224.00	1.18	164.05	8,068.58	61.63	-1,293.99	1,258.58	0.22	0.18	-6.65





Company:

Kerr McGee Oil and Gas Onshore LP

Project: Site:

Uintah County, UT UTM12

Well:

NBU 921-25H Pad NBU 921-25G2AS

Wellbore: Design:

ОН ОН Local Co-ordinate Reference:

TVD Reference:

MD Reference:

North Reference:

**Survey Calculation Method:** Database:

Well NBU 921-25G2AS

GL 4914' & RKB 14' @ 4928.00ft (ENSIGN 139)

GL 4914' & RKB 14' @ 4928.00ft (ENSIGN 139)

True

Minimum Curvature

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,405.00	1.48	145.39	8,249.54	57.77	-1,292.54	1,256.10	0.56	0.19	-21.85
8,495.00	0.94	133.29	8,339.52	56.31	-1,291.35	1,254.54	0.66	-0.60	-13.44
8,586.00	1.41	110.51	8,430.50	55.40	-1,289.75	1,252.76	0.72	0.52	-25.03
8,676.00	1.50	126.65	8,520.47	54.31	-1,287.77	1,250.55	0.46	0.10	17.93
8,767.00	1.78	134.14	8,611.43	52.61	-1,285.80	1,248.18	0.39	0.31	8.23
8,857.00	2.07	127.52	8,701.38	50.65	-1,283.51	1,245.42	0.41	0.32	-7.36
8,948.00	1.56	138.36	8,792.33	48.72	-1,281.38	1,242.84	0.67	-0.56	11.91
9,038.00	1.35	140.63	8,882.31	46.99	-1,279.90	1,240.92	0.24	-0.23	2.52
9,129.00	1.22	169.25	8,973.28	45.21	-1,279.04	1,239.59	0.71	-0.14	31.45
9,219.00	1.23	139.13	9,063.26	43.54	-1,278.23	1,238.34	0.71	0.01	-33.47
9,310.00	1.52	128.21	9,154.24	42.05	-1,276.64	1,236.40	0.43	0.32	-12.00
9,400.00	1.76	142.27	9,244.20	40.22	-1,274.85	1,234.17	0.52	0.27	15.62
9,491.00	1.88	144.69	9,335.15	37.90	-1,273.14	1,231.87	0.16	0.13	2.66
9,581.00	1.80	1 <b>4</b> 8.18	9,425.11	35.49	-1,271.54	1,229.65	0.15	-0.09	3.88
9,672.00	2.32	142.22	9,516.05	32.82	-1,269.66	1,227.09	0.62	0.57	-6.55
9,761.00	2.32	142.22	9,604.98	29.97	-1,267.45	1,224.17	0.00	0.00	0.00
LAST SDI M	WD PRODUCTIO	ON SURVEY							
9,820.00	2.32	142.22	9.663.93	28.09	-1.265.99	1,222,23	0.00	0.00	0.00

Design Anno	etations					
	Measured	Vertical	Local Cool	dinates		
	Depth (ft)	Depth (ft)	+N/-S	+E/-W	Comment	
			(ft)	(ft)		
	161.00	161.00	-0.05	0.58	FIRST SDI MWD SURFACE SURVEY	
	2,580.00	2,566.59	48.83	-165.58	LAST SDI MWD SURFACE SURVEY	
	2,612.00	2,597.40	49.09	-174.22	FIRST SDI MWD PRODUCTION SURVEY	
,	9,761.00	9,604.98	29.97	-1,267.45	LAST SDI MWD PRODUCTION SURVEY	
	9,820.00	9,663.93	28.09	-1,265.99	SDI PROJECTION TO TD	

Checked By:	Approved By:	Date:	



# **Kerr McGee Oil and Gas Onshore LP**

Uintah County, UT UTM12 NBU 921-25H Pad NBU 921-25G2AS

OH

Design: OH

# **Survey Report - Geographic**

09 May, 2011





### SDI Survey Report - Geographic



Company: Project:

Kerr McGee Oil and Gas Onshore LP

Site:

Uintah County, UT UTM12 NBU 921-25H Pad

Well:

NBU 921-25G2AS

Wellbore: Design:

OH ОН Local Co-ordinate Reference:

**TVD Reference:** 

MD Reference: North Reference: GL 4914' & RKB 14' @ 4928.00ft (ENSIGN 139) GL 4914' & RKB 14' @ 4928.00ft (ENSIGN 139)

True

**Survey Calculation Method:** 

Minimum Curvature

Well NBU 921-25G2AS

Database:

EDM5000-RobertS-Local

**Project** 

Uintah County, UT UTM12

Map System:

Universal Transverse Mercator (US Survey Feet)

NAD 1927 - Western US

Geo Datum: Map Zone:

Zone 12N (114 W to 108 W)

System Datum:

Mean Sea Level

Site

From:

Well

NBU 921-25H Pad, SEC 25 T9S R21E

Site Position:

Lat/Long

Northing: Easting:

14,533,311.91 usft 2,062,529.85 usft

Latitude:

40° 0' 36.551 N Longitude: 109° 29' 33.266 W

**Position Uncertainty:** 

0.00 ft

Slot Radius:

13.200 in

Grid Convergence:

0.97

NBU 921-25G2AS, 1484' FNL 763' FEL

**Well Position** 

+N/-S +E/-W 0.00 ft

Northing:

14,533,329.51 usft

Latitude:

40° 0' 36.731 N

**Position Uncertainty** 

0.00 ft

Easting:

2,062,493.70 usft

Longitude:

0.00 ft

Wellhead Elevation:

fŧ

**Ground Level:** 

109° 29' 33.727 W

4,914.00 ft

Wellbore

ОН

**Magnetics** 

**Model Name** 

Sample Date

Declination (°)

Dip Angle (°)

Field Strength

(nT)

IGRF2010

02/22/2011

11.11

65.89

52,367

Design

OH

**Audit Notes:** 

Version:

1.0

Phase:

ACTUAL

Tie On Depth:

0.00

Depth From (TVD)

+N/-S

+E/-W

Direction

**Vertical Section:** 

(ft)

0.00

(ft)

0.00

(ft) 0.00 (°)

286.43

Survey Program

05/09/2011 Date

From

10.00

2,612.00

(ft)

To

(ft)

Survey (Wellbore)

**Tool Name** 

Description

MWD - Standard ver 1.0.1

Survey

2,580.00 Survey #1 SDI MWD SURFACE (OH) 9,820.00 Survey #2 SDI MWD PRODUCTION (OH) MWD SDI MWD SDI

MWD - Standard ver 1.0.1

Measured			Vertical			Мар	Мар		
Depth (ft)	Inclination (°)	Azimuth (°)	Depth (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	14,533,329.51	2,062,493.70	40° 0' 36.731 N	109° 29' 33.727 V
10.00	0.00	0.00	10.00	0.00	0.00	14,533,329.51	2,062,493.70	40° 0' 36.731 N	109° 29' 33.727 V
161.00	0.44	94.92	161.00	-0.05	0.58	14,533,329.47	2,062,494.28	40° 0' 36.730 N	109° 29' 33.720 V
FIRST SI	DI MWD SURF	FACE SURVE	Y						
246.00	0.72	327.56	246.00	0.37	0.62	14,533,329.90	2,062,494.31	40° 0' 36.734 N	109° 29' 33.719 V
331.00	1.33	327.34	330.98	1.65	-0.20	14,533,331.16	2,062,493.47	40° 0' 36.747 N	109° 29' 33.730 V
420.00	2.01	324.98	419.94	3.80	-1.66	14,533,333.29	2,062,491.98	40° 0' 36.768 N	109° 29' 33,748 V
510.00	2.09	325.96	509.89	6.45	-3.48	14,533,335.91	2,062,490.11	40° 0' 36.795 N	109° 29' 33.772 V
600.00	2.32	323.18	599.82	9.27	-5.49	14,533,338.69	2,062,488.05	40° 0' 36.822 N	109° 29' 33.798 V
690.00	2.30	323.20	689.75	12.18	-7.66	14,533,341.56	2,062,485.83	40° 0' 36.851 N	109° 29' 33.826 V
780.00	1.89	332.92	779.69	14.94	-9.42	14,533,344.30	2,062,484.03	40° 0' 36.879 N	109° 29' 33.848 V



# **SDI**Survey Report - Geographic



Company: Kerr McGee Oil and Gas Onshore LP

Project: Uintah County, UT UTM12

 Site:
 NBU 921-25H Pad

 Well:
 NBU 921-25G2AS

Wellbore: OH
Design: OH

Local Co-ordinate Reference:

**TVD Reference:** GL 4914' & RKB 14' @ 4928.00ft (ENSIGN 139)

MD Reference: GL 4914' & RKB 14' @ 4928.00ft (ENSIGN 139)

Well NBU 921-25G2AS

North Reference: True

Survey Calculation Method: Minimum Curvature

Database: EDM5000-RobertS-Local

өу									
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Map Northing	Map Easting		
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)	Latitude	Longitude
870.00	1.57	331.22	869.65	17.35	-10.69	14,533,346.68	2,062,482.72	40° 0' 36.902 N	109° 29' 33.865
960.00	1.79	316.99	959.61	19.46	-12.24	14,533,348.76	2,062,481.13	40° 0' 36.923 N	109° 29' 33,885
1,050.00	2.03	315.41	1,049.56	21.62	-14.32	14,533,350.89	2,062,479.01	40° 0' 36.944 N	109° 29' 33.911
1,140.00	1.82	319.53	1,139.51	23.84	-16.37	14,533,353.07	2,062,476.93	40° 0' 36.966 N	109° 29' 33.938
1,230.00	1.72	322.70	1,229.46	26.00	-18.11	14,533,355.21	2,062,475.15	40° 0' 36.988 N	109° 29' 33.960
1,320.00	1.54	324.20	1,319.43	28.06	-19.64	14,533,357.23	2,062,473.59	40° 0' 37.008 N	109° 29' 33.980
1,410.00	1.45	318.23	1,409.40	29.89	-21.11	14,533,359.04	2,062,472.09	40° 0' 37.026 N	109° 29' 33.998
1,500.00	1.04	305.24	1,499.37	31.21	-22.53	14,533,360.34	2,062,470.64	40° 0' 37.039 N	109° 29' 34.017
1,590.00	2.06	316.18	1,589.34	32.85	-24.32	14,533,361.94	2,062,468.83	40° 0' 37.055 N	109° 29' 34.040
1,680.00	3.53	309.01	1,679.23	35.76	-27.59	14,533,364.80	2,062,465.51	40° 0' 37.084 N	109° 29' 34.082
1,770.00	4.18	292.39	1,769.03	38.75	-32.78	14,533,367.71	2,062,460.27	40° 0' 37.114 N	109° 29' 34.149
1,860.00	4.98	276.83	1,858.75	40.47	-39.69	14,533,369.30	2,062,453.33	40° 0' 37.131 N	109° 29' 34.237
1,950.00	6.80	275.48	1,948.27	41.44	-48.87	14,533,370.12	2,062,444.13	40° 0' 37.140 N	109° 29' 34.355
2,040.00	7.84	273.55	2,037.53	42.33	-60.30	14,533,370.82	2,062,432.69	40° 0' 37.149 N	109° 29' 34.502
2,130.00	8.41	270.69	2,126.63	42.79	-73.01	14,533,371.06	2,062,419.97	40° 0' 37.154 N	109° 29' 34.666
2,220.00	9.33	272.86	2,215.55	43.23	-86.88	14,533,371.27	2,062,406.10	40° 0' 37.158 N	109° 29' 34.844
2,310.00	10.77	275.25	2,304.17	44.36	-102.54	14,533,372.14	2,062,390.42	40° 0′ 37.169 N	109° 29' 35.045
2,400.00	13.07	275.25	2,392.22	46.06	-121.05	14,533,373.52	2,062,371.89	40° 0' 37.186 N	109° 29' 35,283
2,490.00	14.44	273.66	2,479.64	47.71	-142.38	14,533,374.81	2,062,350.53	40° 0' 37.202 N	109° 29' 35.557
2,580.00	15.47	271.90	2,566.59	48.83	-165.58	14,533,375.53	2,062,327.32	40° 0' 37.213 N	109° 29' 35.856
LAST SE	I MWD SURF.	ACE SURVE	ſ						
2,612.00	15.88	271.55	2,597.40	49.09	-174.22	14,533,375.65	2,062,318.67	40° 0' 37.216 N	109° 29' 35.967
FIRST SI	DI MWD PROD	DUCTION SUI	RVEY						
2,702.00	15.16	267.75	2,684.12	48.96	-198.29	14,533,375.11	2,062,294.61	40° 0' 37.215 N	109° 29' 36.276
2,793.00	15.53	267.08	2,771.88	47.87	-222.35	14,533,373.62	2,062,270.58	40° 0' 37,204 N	109° 29' 36.585
2,883.00	15.81	270.65	2,858.53	47.40	-246.64	14,533,372.73	2,062,246.29	40° 0' 37,199 N	109° 29' 36.897
2,974.00	15.46	274.34	2,946.17	48.45	-271.13	14,533,373.37	2,062,221.79	40° 0' 37.210 N	109° 29' 37.212
3,065.00	15.91	274.77	3,033.78	50.41	-295.65	14,533,374.91	2,062,197.24	40° 0' 37.229 N	109° 29' 37.527
3,155.00	17.71	277.55	3,119.93	53.23	-321.52	14,533,377.30	2,062,171.33	40° 0' 37.257 N	109° 29' 37.860
3,246.00	16.54	274.50	3,206.90	56.07	-348.15	14,533,379.68	2,062,144.65	40° 0' 37.285 N	109° 29' 38.202
3,336.00	15.78	272.73	3,293.34	57.66	-373.15	14,533,380.85	2,062,119.63	40° 0' 37.301 N	109° 29' 38.524
3,427.00	15.46	271.26	3,380.98	58.51	-397.63	14,533,381.29	2,062,095.13	40° 0' 37.309 N	109° 29' 38.838
3,517.00	14.31	273.51	3,467.96	59.46	-420.73	14,533,381.85	2,062,072.02	40° 0' 37.318 N	109° 29' 39.135
3,608.00	15.07	276.37	3,555.99	61.46	-443.71	14,533,383.46	2,062,049.01	40° 0' 37.338 N	109° 29' 39.431
3,698.00	16.32	279.51	3,642.63	64.85	-467.81	14,533,386.44	2,062,024.86	40° 0' 37.372 N	109° 29' 39.740
3,789.00	15.60	273.69	3,730.13	67.75	-492.63	14,533,388.92	2,061,999.99	40° 0' 37.400 N	109° 29' 40.059
3,879.00	16.51	273.23	3,816.62	69.25	-517.48	14,533,390.00	2,061,975.12	40° 0' 37.415 N	109° 29' 40.379
3,970.00	15.26	270.27	3,904.14	70.03	-542.37	14,533,390.36	2,061,950.23	40° 0' 37.423 N	109° 29' 40.699
4,060.00	14.79	271.17	3,991.06	70.32	-565.70	14,533,390.26	2,061,926.90	40° 0' 37.426 N	109° 29' 40.999
4,151.00	15.11	269.71	4,078.98	70.50	-589.17	14,533,390.04	2,061,903.42	40° 0' 37.428 N	109° 29' 41.300
4,242.00	14.92	270.53	4,166.88	70.55	-612.74	14,533,389.68	2,061,879.85	40° 0' 37.428 N	109° 29' 41.603
4,332.00	13.07	272.44	4,254.20	71.09	-634.50	14,533,389.86	2,061,858.09	40° 0' 37.433 N	109° 29' 41.883
4,422.00	13.76	275.23	4,341.75	72.50	-655.32	14,533,390.91	2,061,837.24	40° 0' 37.447 N	109° 29' 42.151
4,513.00	14.69	277.95	4,429.96	75.08	-677.53	14,533,393.12	2,061,815.00	40° 0' 37.473 N	109° 29' 42.436
4,603.00	14.40	274.01	4,517.07	77.44	-700.00	14,533,395.10	2,061,792.49	40° 0' 37.496 N	109° 29' 42.725
4,694.00	15.16	278.14	4,605.07	79.92	-723.06	14,533,397.19	2,061,769.39	40° 0' 37.521 N	109° 29' 43.021
4,784.00	15.18	273.36	4,691.93	82.27	-746.48	14,533,399.15	2,061,745.94	40° 0' 37.544 N	109° 29' 43.322
4,874.00	16.72	273.31	4,778.46	83.71	-771.17	14,533,400.17	2,061,721.23	40° 0' 37.558 N	109° 29' 43.640
4,965.00	16.14	271.01	4,865.75	84.69	-796.88	14,533,400.71	2,061,695.50	40° 0' 37.568 N	109° 29' 43.970
5,055.00	16.64	269.80	4,952.09	84.86	-822.28	14,533,400.46	2,061,670.11	40° 0' 37.569 N	109° 29' 44.29
5,146.00	16.64	270.00	5,039.28	84.82	-848.33	14,533,399.97	2,061,644.05	40° 0' 37.569 N	109° 29' 44.632
5,236.00	16.96	270.58	5,125.44	84.95	-874.35	14,533,399.66	2,061,618.04	40° 0' 37.570 N	109° 29' 44.966
5,327.00	15.71	269.36	5,212.77	84.95	-899.94	14,533,399.23	2,061,592.45	40° 0' 37.570 N	109° 29' 45.29!
5,418.00	16.14	269.44	5,300.27	84.69	-924.91	14,533,398.54	2,061,567.49	40° 0' 37.568 N	109° 29' 45.616
5,508.00	15.16	268.67	5,386.94	84.29	-949.18	14,533,397.74	2,061,543.23	40° 0' 37.564 N	109° 29' 45.928



### SDI Survey Report - Geographic



Company:

Kerr McGee Oil and Gas Onshore LP

Project:

Uintah County, UT UTM12

Site: Well:

NBU 921-25H Pad NBU 921-25G2AS

Wellbore: Design:

ОН

ОН

Local Co-ordinate Reference:

TVD Reference: MD Reference:

North Reference:

Survey Calculation Method:

Database:

Well NBU 921-25G2AS

GL 4914' & RKB 14' @ 4928.00ft (ENSIGN 139)

GL 4914' & RKB 14' @ 4928.00ft (ENSIGN 139)

Minimum Curvature

leasured			Vertical			Мар	Map		
Depth	Inclination	Azimuth	Depth	+N/-S	+E/-W	Northing	Easting		
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)	Latitude	Longitude
5,599.00	15.60	270.63	5,474.68	84.15	-973.31	14,533,397.19	2,061,519.11	40° 0' 37.562 N	109° 29' 46.2
5,689.00	14.55	268.57	5,561.58	84.00	-996.71	14,533,396.64	2,061,495.71	40° 0' 37.561 N	109° 29' 46.5
5,780.00	15.35	270.78	5,649.50	83.88	-1,020.19	14,533,396.12	2,061,472.24	40° 0' 37.560 N	109° 29' 46.8
5,870.00	14.52	269.72	5,736.46	83.99	-1,043.38	14,533,395.84	2,061,449.05	40° 0' 37.561 N	109° 29' 47.1
5,960.00	13.64	269.41	5,823.75	83.82	-1,065.27	14,533,395.30	2,061,427.16	40° 0' 37.559 N	109° 29' 47.4
6,051.00	13.53	268.66	5,912.21	83.46	-1,086.64	14,533,394.58	2,061,405.80	40° 0' 37.556 N	109° 29' 47.6
6,141.00	12.61	266.34	5,999.88	82.59	-1,106.97	14,533,393.37	2,061,385.49	40° 0' 37.547 N	109° 29' 47.9
6,232.00	11.60	263.75	6,088.85	80.96	-1,125.98	14,533,391.41	2,061,366.51	40° 0' 37.531 N	109° 29' 48.2
6,323.00	11.37	266.66	6,178.03	79.44	-1,144.03	14,533,389.59	2,061,348.49	40° 0' 37.516 N	109° 29' 48.4
6,413.00	10.56	264.78	6,266.39	78.17	-1,161.10	14,533,388.04	2,061,331.44	40° 0' 37.503 N	109° 29' 48.6
6,503.00	9.92	267.82	6,354.95	77.13	-1,177.06	14,533,386.72	2,061,315.50	40° 0' 37.493 N	109° 29' 48.8
6,594.00	9.31	265.66	6,444.67	76.27	-1,192.23	14,533,385.61	2,061,300.35	40° 0' 37.484 N	109° 29' 49.0
6,684.00	9.12	269.52	6,533.51	75.66	-1,206.63	14,533,384.75	2,061,285.97	40° 0' 37.478 N	109° 29' 49.2
6,775.00	8.45	267.24	6,623.45	75.28	-1,220.52	14,533,384.14	2,061,272.09	40° 0' 37.475 N	109° 29' 49.4
6,865.00	7.71	264.45	6,712.55	74.38	-1,233.13	14,533,383.02	2,061,259.49	40° 0' 37.466 N	109° 29' 49.5
6,956.00	7.42	268.32	6,802.76	73.62	-1,245.08	14,533,382.06	2,061,247.56	40° 0' 37.458 N	109° 29' 49.7
7,047.00	6.38	267.05	6,893.10	73.18	-1,256.00	14,533,381.44	2,061,236.64	40° 0' 37.454 N	109° 29' 49.8
7,137.00	5.75	265.67	6,982.60	72.59	-1,265.49	14,533,380.68	2,061,227.16	40° 0' 37.448 N	109° 29' 49.9
7,227.00	4.90	265.39	7,072.21	71.94	-1,273.82	14,533,379.89	2,061,218.85	40° 0' 37.442 N	109° 29' 50.1
7,318.00	4.21	271.18	7,162.92	71.69	-1,281.03	14,533,379.53	2,061,211.64	40° 0' 37.439 N	109° 29' 50.1
7,409.00	2.74	258.55	7,253.75	71.33	-1,286.50	14,533,379.07	2,061,206.18	40° 0' 37.436 N	109° 29' 50.2
7,499.00	1.72	243.39	7,343.68	70.30	-1,289.82	14,533,377.98	2,061,202.88	40° 0' 37.425 N	109° 29' 50.3
7,590.00	1.21	232.40	7,434.65	69.10	-1,291.80	14,533,376.75	2,061,200.92	40° 0' 37.413 N	109° 29' 50.3
7,680.00	88.0	246.19	7,524.64	68.24	-1,293.19	14,533,375.87	2,061,199.54	40° 0' 37.405 N	109° 29' 50.3
7,771.00	0.91	223.27	7,615.63	67.43	-1,294.32	14,533,375.04	2,061,198.42	40° 0' 37.397 N	109° 29' 50.3
7,861.00	0.50	189.78	7,705.62	66.53	-1,294.88	14,533,374.12	2,061,197.88	40° 0' 37.388 N	109° 29' 50.3
7,952.00	0.60	166.96	7,796.62	65.67	-1,294.84	14,533,373.27	2,061,197.94	40° 0' 37.380 N	109° 29' 50.3
8,042.00	0.70	169.35	7,886.61	64.67	-1,294.63	14,533,372.27	2,061,198.16	40° 0' 37.370 N	109° 29' 50.3
8,133.00	1.02	170.10	7,977.60	63.33	-1,294.39	14,533,370.93	2,061,198.43	40° 0' 37.356 N	109° 29' 50.3
8,224.00	1.18	164.05	8,068.58	61.63	-1,293.99	14,533,369.24	2,061,198.85	40° 0' 37.340 N	109° 29' 50.3
8,314.00	1.31	165.27	8,158.56	59.74	-1,293.48	14,533,367.37	2,061,199.40	40° 0' 37.321 N	109° 29' 50.3
8,405.00	1.48	145.39	8,249.54	57.77	-1,292.54	14,533,365.41	2,061,200.37	40° 0' 37.301 N	109° 29' 50.3
8,495.00	0.94	133.29	8,339.52	56.31	-1,291.35	14,533,363.97	2,061,201.59	40° 0' 37.287 N	109° 29' 50.3
8,586.00	1.41	110.51	8,430.50	55.40	-1,289.75	14,533,363.09	2,061,203.19	40° 0' 37.278 N	109° 29' 50.3
8,676.00	1.50	126.65	8,520.47	54.31	-1,287.77	14,533,362.03	2,061,205.20	40° 0' 37.267 N	109° 29' 50.2
8,767.00	1.78	134.14	8,611.43	52.61	-1,285.80	14,533,360.37	2,061,207.19	40° 0' 37.251 N	109° 29' 50.2
8,857.00	2.07	127.52	8,701.38	50.65	-1,283.51	14,533,358.45	2,061,209.52	40° 0' 37.231 N	109° 29' 50.2
8,948.00	1.56	138.36	8,792.33	48.72	-1,281.38	14,533,356.56	2,061,211.68	40° 0' 37.212 N	109° 29' 50.1
9,038.00	1.35	140.63	8,882.31	46.99	-1,279.90	14,533,354.85	2,061,213.19	40° 0' 37.195 N	109° 29' 50.1
9,129.00	1.22	169.25	8,973.28	45.21	-1,279.04	14,533,353.08	2,061,214.08	40° 0' 37.177 N	109° 29' 50.1
9,219.00	1.23	139.13	9,063.26	43.54	-1,278.23	14,533,351.42	2,061,214.92	40° 0' 37.161 N	109° 29' 50.1
9,310.00	1.52	128.21	9,154.24	42.05	-1,276.64	14,533,349.96	2,061,216.53	40° 0' 37.146 N	109° 29' 50.1
9,400.00	1.76	142.27	9,244.20	40.22	-1,274.85	14,533,348.16	2,061,218.35	40° 0' 37.128 N	109° 29' 50.1
9,491.00	1.88	144.69	9,335.15	37.90	-1,273.14	14,533,345.87	2,061,220.11	40° 0' 37.105 N	109° 29' 50.0
9,581.00	1.80	148.18	9,425.11	35.49	-1,271.54	14,533,343.49	2,061,221.75	40° 0' 37.081 N	109° 29' 50.0
9,672.00	2.32	142.22	9,516.05	32.82	-1,269.66	14,533,340.85	2,061,223.67	40° 0' 37.055 N	109° 29' 50.0
9,761.00	2.32	142.22	9,604.98	29.97	-1,267.45	14,533,338.04	2,061,225.93	40° 0' 37.027 N	109° 29' 50.0
	I MWD PROD			_0.01	.,,	. 1,000,000.04	2,001,220.00	TO 0 01.021 N	109 29 30.0
9,820.00	2.32	142.22	9,663.93	28.09					



### SDI

### Survey Report - Geographic



Company:

Kerr McGee Oil and Gas Onshore LP

Project: Site:

Uintah County, UT UTM12

Well:

NBU 921-25H Pad NBU 921-25G2AS

Wellbore: Design:

ОН ОН

Local Co-ordinate Reference:

Well NBU 921-25G2AS

GL 4914' & RKB 14' @ 4928.00ft (ENSIGN 139) GL 4914' & RKB 14' @ 4928.00ft (ENSIGN 139)

**TVD Reference:** MD Reference: North Reference:

**Survey Calculation Method:** 

Minimum Curvature

Database:

EDM5000-RobertS-Local

**Design Annotations** Measured Vertical **Local Coordinates** Depth Depth +N/-S +E/-W (ft) (ft) Comment (ft) 161.00 161.00 -0.05 0.58 FIRST SDI MWD SURFACE SURVEY 2,580.00 2,566.59 48.83 -165.58 LAST SDI MWD SURFACE SURVEY

	Checked By:	Approved By:	Date:	_
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